FE318

Diagram No. 1213-4

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Side Scan Sonar

Field No. HE-10-2-88

Registry No. FE-318SS

LOCALITY

State Connecticut--New York

General Locality Long Island Sound

Sublocality Between Matinecock Point & Great Captain Island

19 88

CHIEF OF PARTY
LCDR C.B. Lawrence

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DATE December 5, 1989

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FE318

NOAA FORM 77-28 (-72) | U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTER NO. FE-318-SS

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO. HE 10-2-88

State Connecticut & New York

General locality Long Island Sound

Locality Between Matinecock Point and Great Captain Island

Scale 1:10,000 Date of survey August 8th thru SEPT.20,1988

Instructions dated May 26th,1988 Project No. OPR-B660-RU/HE-88

Vessel NOAA SHIP HECK S-591,EDPN 9140

Chief of party Lcdr.Christopher B.Lawrence,CO,NOS HECK

Surveyed by LT.Grady H.Tuell,LT(jg)AndrewL.Beaver,ST.Walter R.Morris

Soundings taken by echo sounder, hand lead, pole DSF 6000 Echosounder,Dual Beam

Graphic record scaled by Automated HDAPS System

Graphic record checked by LT.Tuell,LT(jg)Beaver,ST.Morris

Protracted by ____ Automated plot by HDAPS XYNETICS 1201 Plotter (AMC)

Verification by Atlantic Hydrographic Section (AMC)

Soundings in ~~feet~~ feet at ~~MLW~~ MLLW feet at MLLW

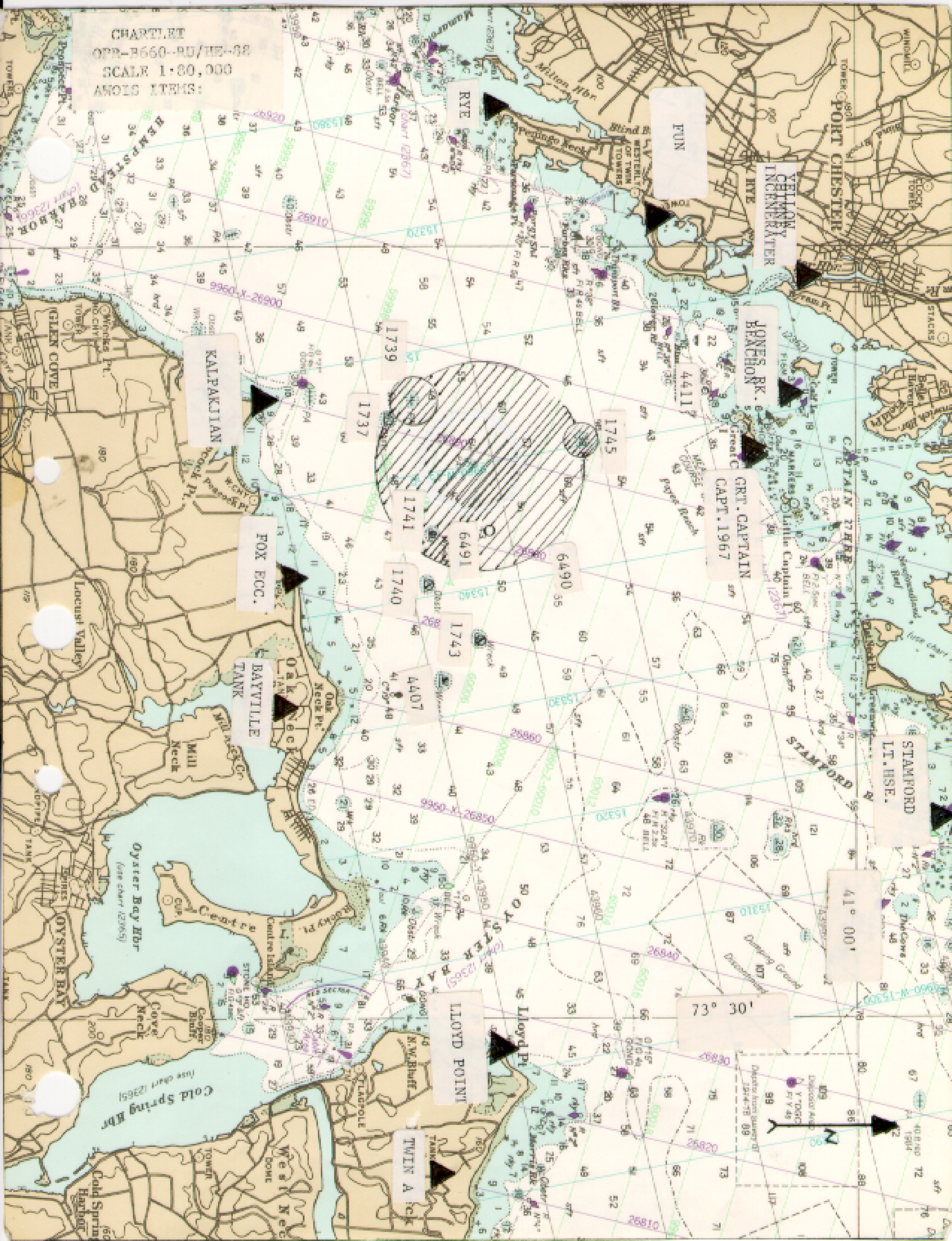
REMARKS: Notes in the Descriptive Report were made in red during office processing.

AWOIS/SURF M.M 1/4/90

KWW 3/8/94

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537

☆ U.S. GOVERNMENT PRINTING OFFICE 1978-665-010-1174


CHARTLET
OPR-B660-RU/HE-88
SCALE 1:80,000
AWOIS ITEMS:
RYE
FUN
YELLOW CHIMNEY INCINERATER
PORT CHESTER
KALPAKJIAN
JONES BEACHON RK.
4411
1739
1737
1745
GRT. CAPTAIN CAPT. 1967
1741
6491
6490
FOX ECC.
1740
1743
BAYVILLE TANK
4407
STAMFORD LT. HSE.
41° 00'
73° 30'
LLOYD POINT
TWIN A
GLEN COVE
HEMPSTEAD HARBOR
Locust Valley
OYSTER BAY
Oyster Bay Hbr
Centre I.
Cold Spring Hbr
Lloyd Pt.
OYSTER BAY
Captain Harbor
Stamford Harbor
Milton Hbr
Peningo Neck
9960-X-26900
9960-X-26850
Dumping Ground

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APPENDICES

* Removed from the original Descriptive Report and filed with the survey records.

DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY FE-318-SS
FIELD NUMBER HE-10-2-88
SOUTHERN NEW ENGLAND COAST, CONNECTICUT AND NEW YORK
LONG ISLAND SOUND
BETWEEN MATINECOCK POINT AND GREAT CAPTAIN ISLAND
Scale 1:10000
NOAA SHIP HECK S-591
LCDR Christopher B. Lawrence, CMDG

A. PROJECT DESCRIPTION

A1. Project Authorization

This survey was conducted in accordance with Hydrographic Project Instructions OPR-B660-RU/HE, Southern New England Coast, Connecticut and New York, dated May 26, 1988; CHANGE NO. 1 dated July 6, 1988; CHANGE NO. 2 dated September 26, 1988; CHANGE NO. 3 dated November 22, 1988; and CHANGE NO. 4 dated December 8, 1988.

A2. Project Purpose

The project purpose was to respond to requests from the Northeast Marine Pilots Inc., of Newport, Rhode Island, to verify or disprove and determine least depths for certain wrecks and obstructions in western Long Island Sound. The data from this project will supplement a basic hydrographic survey (OPR-B285) which is scheduled for this area in 1989-1991. The U.S. Navy, as well as state and local governments, have requested updated bathymetric and hydrographic survey data for western Long Island Sound and vicinity to aid in proposed biological, chemical, environmental, and coastal zone management studies in this region.

B. PROJECT OVERVIEW

B1. General

Project Instructions for OPR-B660-RU/HE-88 assigned to the NOAA Ships RUDE and HECK a total of 63 AWOIS items. This report includes all work performed on the following ten AWOIS items: 1737, 1739, 1740, 1741, 1743, 1745, 4407, 4411, 6490, and 6491.

Horizontal control recovery and installation of navigation units for these AWOIS items began on August 8, 1988 (DOY 221).

Side scan sonar survey operations began on August 11, 1988 (DOY 224) and concluded on September 20, 1988 (DOY 264).

B2. METHODOLOGY

The general survey technique used for this project was to acquire 200% side scan sonar (SSS) imagery of a specified search area by running two sets of search lines oriented orthogonally to each other. For some items, 400% SSS coverage was achieved in a similar manner. The specific survey requirements for each item were specified by the Hydrographic Surveys Branch (N/CG24) in a computer generated AWOIS listing. This listing was periodically updated throughout the field season.

The SSS imagery was carefully analyzed both on-line and off-line in order to identify contacts requiring futher investigation. Each contact was evaluated for significance based on a number of factors: water depth, height of target as computed from its acoustic shadow, size and shape of contact, nature of the bottom, and proximity to other contacts. Additional reconnaissance SSS imagery was conducted on several contacts to assist in this evaluation process.

A team of scuba divers investigated each significant contact. A precise depth was measured over the highest point of the contact using a pneumofathometer. The divers affixed a marker buoy on the high point of the contact. The ship was then manuevered alongside this buoy and a multiple line of position fix was taken using the Motorola MiniRanger navigation system.

Survey data acquisition and processing were accomplished utilizing the HDAPS system and the latest version of the NAVITRONIC NAVISOFT 300 software provided to the ship by N/CG24. The specific survey instrumentation used is discussed in Sections F through H of this text.

C. AREA SURVEYED

This report covers all survey operations performed to resolve AWOIS items located in Long Island Sound between Matinecock Point and Oak Neck Point, Long Island. All items are located south of Great Captain Island, Connecticut, and between longitudes 73° 39' and 73° 34' West.

The largest scale chart of the survey area is NOS Chart 12367, North Shore of Long Island Sound, Greenwich Point to New Rochelle.

D. SURVEY VESSELS

All hydrographic and side scan sonar data were collected by the NOAA Ship HECK (EDPN 9140).

A 17 foot Boston Whaler skiff was used for installation and maintenence of MiniRanger shore stations and for general utility work.

A 23 foot SISU launch was used as a dive support boat. The pneumofathometer was mounted in this launch and all diver least depths were measured from the SISU.

E. SURVEY SHEETS (Field)

All survey sheets submitted in this report were generated using the Preplot Plotter Sheet utility of the Presurvey menu of the NAVISOFT 300 software on the HDAPS system. A Brunning 824 CS Plotter (S/N 15237) was used as the plotting device. All sheets are Modified Transverse Mercatur projections and are plotted on the North American Datum of 1983 (NAD 83).

Four field survey sheets were used during this survey. Each sheet is briefly described below. See APPENDIX V, PROJECT / PLOTTER SHEET PARAMETERS,* for the technical specifications on each sheet.

E1. HE-10-2-88

This 1:10000 scale sheet is oriented East/West and is roughly centered on AWOIS item 6490. HE-10-2-88 is the primary survey sheet for this report. The sheet stretches from Matinecock Point on the west to Oak Neck Point on the east. Nine items are included on the sheet.

Six copies of HE-10-2-88 are submitted:

1 mylar 1st 100% smooth SSS swathplot

1 mylar 2nd 100% smooth SSS swathplot

1 mylar 200% SSS smooth trackplot

1 paper 1st 100% field SSS swathplot

1 paper 2nd 100% field SSS swathplot

1 mylar contact plot

*Appendix V has been removed from the original Descriptive Report and filed with the survey records.

E2. HE-10-4-88

This sheet is a 1:10000 plot oriented EAST/WEST and is centered on AWOIS item 4411. Item 4411, the only item on the sheet, lies immmediately southwest of Great Captain Island.

Two copies of this sheet are submitted:

1 mylar 200% smooth SSS swathplot

1 mylar 200% smooth trackplot

1 paper 200% field SSS swathplot

E3. HE-2.5-6-88

This sheet is a 1:2500 plot centered on AWOIS Item 1737. . The plot was generated to support hydrographic development of the item as specified in the AWOIS listing. (Refer to Section K1 of this text.)

Two copies of this sheet are submitted:

1 mylar hydro development smooth depthplot

1 paper hydro development field depthplot

E4. HE-1-5-88

This sheet is a 1:1000 scale plot centered on AWOIS Item 1745. The sheet was generated for use in conducting a test of line spacing requirements for determination of least depth over a wreck by hydrographic methods. The SSS data acquired on this sheet have been forwarded to N/CG24. However, the original fathometer records were retained and are forwarded as part of this report.

The HECK was able to obtain exact agreement between the diver determined and the hydrographic least depth. The hydrographic position of the wreck was superior to the fix obtained alongside the diver's buoy. Therefore, these hydrographic data are submitted as the position of AWOIS Item 1745. These developments are discussed fully in Section K6 of this text.

Two copies of HE-1-5-88 are submitted:

1 mylar smooth depth plot

1 mylar smooth trackplot

F SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

F1. Raytheon DSF 6000N Echosounder

All hydrographic soundings for this survey were acquired using a Raytheon DSF echosounder (S/N A107). The system was calibrated daily with an Electronic Depth Simulator Instrument (EDSI) provided by AMC's EEB. The daily tests are included as part of each day's raw data records. Reference APPENDIX I.A, DAILY ABSTRACT OF DSF AND EG&G TESTS, for dates on which the DSF check was performed.

The DSF 6000 worked well throughout the project. Both low and high frequency depths were digitized, but only the high frequency depths were used for survey operations. The gain function was normally set manually. The digitizing gate was set at 10 percent of depth.

F2. EG&G Model 260 Side Scan Sonar

Side scan sonar (SSS) operations were conducted utilizing an EGG Model 260 slant corrected Side Scan Sonar recorder (S/N 0011443) and a model 272 dual frequency towfish (S/N 0011591).

The towfish is led through a fairlead block over the stern and towed astern at speeds of 2 to 5 knots. Fish height over bottom is controlled by a combination of cable out and ship speed. During normal operations, the 100 meter range and 100 Khz frequency settings were used. The paper speed on the recorder was set manually. The operator made frequent checks of vessel speed and adjusted the paper speed as necessary. This procedure eliminated "speed jumps" and insured that targets were depicted in their correct size and shape.

Side scan operations were conducted in accordance with Provisional Side Scan Sonar Manual dated April 25, 1986. Periodic confidence checks were performed by one of three methods: by deploying a 100 Khz pinger transponder suspended just above the bottom and then towing the fish by the pinger; by towing the fish by a previously located contact; or by noting recognizable bottom characteristics at the edges of the sonar range scale in use.

The SSS system provided very good imagery for the duration of the project. HECK personnel discovered that a pipeline running east-west on the floor of Long Island Sound transversed the center of sheet HE-10-2-88. This pipeline provided a very good opportunity for online image quality checks. The pipeline is clearly visible on the sonargrams and is marked as a "confidence

check" where it appears. The approximate route of the pipeline is sketched on the field survey swathplot sheets. See Overlay to Accompany Sheet 1 of 14.
There were numerous lobster pots in the survey area which presented a problem in that their bouys are easily "hooked" by the SSS towfish. On the second day of operations, August 12 (DOY 225), the SSS towcable was badly damaged in such an incident. The 50 meter backup cable was installed and operations continued. Over the weekend of August 13, a new steel towcable was installed. This cable provided more protection from the lobster pot buoys and had the added benefit of producing a level, easily maintained flight of the towfish.

On August 17 (DOY 230), SSS operations were suspended for approximately three hours in order to make repairs to the SSS tow winch slip rings.

F3. Pneumofathometers

All diver determined least depths were measured with a pneumofathometer, The HECK is equipped with two precision depth gauges, a 0-70 FSW depth gauge, and a 0-140 FSW gauge. The shallow gauge was most recently calibrated on July 9, 1988. The deep gauge was calibrated against the NOAA Ship RUDE's gauge on March 7, 1988. Copies of these calibrations are included in APPENDIX I.B, PNEUMOFATHOMETER CALIBRATIONS AND SYSTEMS CHECKS.*

The HECK's pneumofathometer system is built and operated according to specifications set forth in HYDROGRAPHIC GUIDELINE NO. 55. The 0-70 foot gauge was used for all depth determinations and was checked against the deep gauge values. Several leadline comparisons were performed as systems checks on the pnumofathometer depths. The results of these checks are included in APPENDIX I.B.*

The system check values were not applied to the diver determined depths. Weather conditions were not calm enough to yield a corrector that HECK personnel thought was more accurate than the calibration of the gauge itself.

G CORRECTIONS TO SOUNDINGS

G1. Velocity Correctors

Velocity correction data for the Raytheon DSF 6000N echosounder were obtained by MARTEK (S/N 177) cast. Two casts were conducted:

*Removed from the original Descriptive Report and filed with the survey records.

DOY	LATITUDE	LONGITUDE
224	40° 56' 06"	73° 37' 12"
238	40° 56' 06"	73° 38' 48"

The MARTEK data were reduced and velocity corrections calculated using program VELOCITY. The computed velocity correctors were then applied online to echosounder depths by entering the correction data into the HDAPS sound velocity table.

The velocity table generated for the DOY 224 cast was calculated using the mean of two MARTEK casts which were conducted on that date, in close proximity to each other, and within one half hour.

Reference APPENDIX I.C, VELOCITY CORRECTION DATA for listings of the cast data and output from the VELOCITY software. HDAPS velocity table listings are shown in APPENDIX I.D. *

MARTEK units are calibrated by AMC personnel. A copy of the pre-deployment calibration is included in APPENDIX I.E.* A copy of the post-deployment calibration will be available from AMC at the end of the field season.

A dual leadline comparison was performed in order to compare DSF depths with direct measured depths. The comparison was performed on DOY 238 in the project area. The sea conditions were calm and there was little wind. Velocity correctors were included in the comparison. The results of the comparison (See APPENDIX I.F)* show that the DSF high frequency depths were within one foot of the leadline depth in fifty feet of water. The low frequency depths agreed within one-half foot.

G2. Tide Corrections

The tidal datum for this project is mean lower low water. The operating tide stations at Willets Point, New York (851-6990), and Bridgeport, Connecticut (846-7150) will serve as control for datum determination. The Willets Point and Bridgeport stations were also used as the reference stations for predicted tides. No tide stations were established by the HECK in support of this survey.

All hydrographic and diver determined depths have been corrected for predicted tides. The tidal values were taken from "Tide Tables 1988 High and Low Water Predictions, East Coast of North and South America". Correctors for time and height were taken from the nearest listed geographic position on Long Island Sound.

Removed from the original Descriptive Report and filed with the survey records.

Tidal correctors were applied online by entering the appropriate values into the HDAPS predicted tide tables. Three predicted tide tables were used. These tables are included in APPENDIX I.G, HDAPS PREDICTED TIDES TABLES.* Smooth tide correctors were applied during office processing at AMC.

G3. Settlement and Squat Correctors

Settlement and squat correctors for the HECK were determined on March 22, 1988 (DOY 82), at Little Creek Naval Amphibious Base in Norfolk, Virginia. An observer was put ashore with a level instrument and changes in relative height were measured as the ship passed by the observer while running at various speeds. (Reference APPENDIX I.H, SETTLEMENT AND SQUAT DATA)*

Settlement and squat values were applied online to hydrographic soundings by entering the observed values into the HDAPS offset table. A copy of this table is included in APPENDIX I.I, HDAPS OFFSET TABLE.*

G4. Heave, Roll, Pitch Sensor and Correctors

Heave is measured by a Datawell B.V. (S/N 19110-C) heave, roll, and pitch sensor (HIPPY) located midships near the transducer. The sensor gathers online data which is applied to the soundings in near real time.

All data acquired in the echosounder mode has been corrected by applying HIPPY correctors. Hydrography collected in the side scan mode was manually corrected only if the hydrography was smooth plotted. This process was used only for about one half of the hydrographic data shown on HE-2.5-6-88, Hydrographic Development of AWOIS Item 1737.

G5. Vessel Draft Corrector

During a recent (February 1988) drydock period, an exact measurement of 19.0 feet was taken from the DSF transducers to a fixed point on each bridge wing of the ship. After refloating the ship, the height above the waterline was determined for this point. The ships static draft was calculated to be exactly 6.9 feet (2.10 meters).

This draft was applied online to hydrographic soundings by entering the value of 2.1 meters as the high frequency transducer height in the HDAPS offset table. See APPENDIX I.I, HDAPS OFFSET TABLE.*

Removed from the original Descriptive Report and filed with the survey data.

H. HORIZONTAL CONTROL - See also sections 2.a. and 4. of the Evaluation Report.

H1. Survey Navigation

Vessel survey navigation was accomplished by the range-range method, utilizing the Motorola MiniRanger Falcon 484 system. RPU S/N H0375 and RT S/N G6346 were used as the shipboard components for the duration of operations covered by this report.

This RPU/RT combination was originally issued as the backup installation for the NOAA Ship RUDE. This equipment was installed aboard the HECK on August 3, 1988 (DOY 216), when problems developed with both RPU/RT combinations which had been issued to the HECK .

The MiniRanger system is interfaced to the HDAPS system in such a way that only the ranges and signal strengths are recorded; the position computation capability of the Falcon system is not utilized. Vessel position is computed by a least squares predictor/corrector algorithm within the NAVITRONIC NAVISOFT 300 software.

The hydrographer must specify each of three interactive parameters which "tune" the positioning algorithm. The following parameters were entered into the Offset Table (See APPENDIX I.I, HDAPS OFFSET TABLE)*

1) acceleration limit ..... 0.2 meters second $^{-2}$

2) angle limit ..... 0.3 degrees second $^{-1}$

3) crabbing limit ..... 0.4 degrees

The algorithm simultaneously uses up to four electronic lines of position (LOP's). Additionally, the ship's gyro heading and speed are used to predict a position. Whenever more than two acceptable LOP's are measured, the position computation is mathematically overdetermined. In order to utilize all available information, a least squares adjusted position is computed.

Three measures of the quality of this adjusted position are: the magnitude of the residuals on each range; the size and orientation of the error ellipse; and the radius of the 95% error circle. HDAPS provides the hydrographer with a continuous graphic display of these data as well as a rough graphic of survey geometry.

*Removed from the original Descriptive Report and filed with the survey records.

The HECK routinely conducted surveying operations using four MiniRanger LOP's, although occassionally one or more ranges were automatically rejected from the solution due to poor signal strength. At no time during this project did the maximum residual consistently exceed 0.5 mm at the survey scale (5 meters). The 95% confidence error circle radius very rarely exceeded 1.5 mm at the survey scale (15 meters).

A pre-project baseline calibration of the MiniRanger system was conducted at Fentress Airforce Base in conjunction with the NOAA Ship Rude on July 6, 1988 (DOY 188). During this calibration, the range correctors were determined for each combination of transponder and shipboard R/T and RPU. A minimum acceptable signal strength (MASS) of 15 was found to be required for each transponder. Reference APPENDIX II.F, MINIRANGER BASELINE CALIBRATION DATA,* for the data records on the calibration.

The range corrector and MASS for each MiniRanger code was entered into the HDAPS system using the Pre-Survey C-O Table Utility. This table provides the mechanism by which HDAPS automatically applies the proper range corrector and removes from the position computation those LOP's with signal strengths below MASS. A new C-O Table was generated each time changes were made to the navigation configuration. Reference APPENDIX II.G, HDAPS C-O TABLES,* for the C-O tables used during this survey.

Acceptable MiniRanger navigation system performance was verified by comparing individual range-range fixes to simultaneous sextant three-point-fixes. These critical systems checks were conducted monthly or whenever the survey configuration was altered. Non-critical navigation system checks were performed daily to insure that the instrumentation was functioning within specifications. All systems check data are included in the raw data printouts for the day on which they were obtained. The results of the various systems checks are tabulated in APPENDIX II.I, ELECTRONIC CORRECTOR ABSTRACT.*

MiniRanger shore station installations were placed either over, or directly on, geodetic stations. An eccentric installation was required at station FOX 1942. The transponder was placed on the roof of a nearby building. (See APPENDIX II.C, COMPUTATION OF FOX ECCENTRIC.)* The transponder at station RYE was fastened directly to the station itself, which is a flagpole. Geodetic stations and computations are discussed in Section H2 of this text.

The horizontal control station positions were entered into the HDAPS Control Station Tables in the Pre-Survey menu. (See APPENDIX II.A, LIST OF HORIZONTAL CONTROL STATIONS AND HDAPS CONTROL STATION TABLE). The appropriate MiniRanger codes were

*Removed from the original ~~survey~~ Descriptive Report and filed with the survey data.

attatched to the station number on this table. Each time the survey navigation configuration was altered, the control station table was modified so that it reflected the correct MiniRanger code placement. APPENDIX II.H, ABSTRACT OF POSITIONS,* correlates control stations, MiniRanger codes, position numbers and dates of use.

Generally, survey navigation for the project was excellent. The only problem encountered was that several large trees in close proximity to station RYE blocked the line-of-sight to the northern portion of the survey area. For this reason, much of the northern portion of the survey area was surveyed with three LOP's.

H2. GEODETIC CONTROL

The horizontal datum for this project is the North American Datum of 1983 (NAD 83). The coordinates for each station were taken from published NGS coordinates. (Reference NGS publications: Geodetic Control Data, NAD 83 coordinates for New York and Connecticut.) Station KALPAKJIAN 1986, was provided by AMC Photogrammetry Branch personnel.

All horizontal control stations were recovered in accordance with the Hydrographic Manual and AMC OPORDER 82. Stations FOX 1942, CAPTAIN 1967, and KALPAKJIAN were occupied. Other stations were verified by theodolite cuts or by visual inspection and comparison to the description. All geodetic observations were conducted by ship's personnel using the ship's Wild T-2 theodolite and Hewlett - Packard HP3808 EDMI. All geodetic computations were completed using the MTEN ENHANCEMENTS software (acquired from NGS) on the ship's IBM XT personal computer.

Observations were conducted at Station FOX 1942 in order to establish an eccentric installation of the MiniRanger navigation transponder. The station was occupied twice.

The first observations were conducted on August 9, 1988. The station was occupied using GREAT CAPTAIN ISLAND LIGHTHOUSE 1882 as the initial station. The eccentric was set on the roof of a nearby building. The slope distance to the eccentric point was measured using the EDMI. Vertical angles were measured with the theodolite. A position was computed for the eccentric point based on these observations, carrying the azimuth forward from the initial station. Hydrographic survey operations were conducted using these coordinates as a "field computed position". However, a second occupation of FOX 1942 was required in order to obtain an azimuth check and to verify other stations used for hydrographic control.

*Removed from the original Descriptive Report and filed with the survey data

The second occupation was made at FOX 1942 on August 30, 1988. Several elevated control stations were visible across the sound. The angle to the eccentric was reobserved, and due to the short distance, this second angle differed from the August 9 angle by about 20 seconds. The "final position" for the MiniRanger eccentric was computed using this angle. The inverse distance between the two positions is about 0.03 meters. (Reference APPENDIX II.C, COMPUTATION OF FOX ECCENTRIC.)*

The following five stations were recovered by observing azimuth checks at FOX 1942:

STATION	AZIMUTH CHECK
CAPTAIN 1967	17.7"
STAMFORD HARBOR LH	10.0"
GREENS LEDGE LH	17.4"
HARRISON OSBORN MEM CUP	7.0"
FUN	9.1"

HECK personnel felt that these checks were slightly high. NGS personnel (N/CG 121) reported that trouble had been encountered in making the NAD 83 adjustment of this area and that some of the lower order stations might not be tied together strongly. Checking on this premise, a resection of FOX 1942 was computed using the angles observed. This resected position differed from the published coordinates of the station by only 0.3 meters. As an additional check, the distance from CAPTAIN 1967 to FOX 1942 was measured using the EDMI. The measured distance checked with the inverse distance (using published coordinates) to about 1:50000. Based on this check, the published coordinates of FOX 1942 were held and used to compute the eccentric position for the MiniRanger transponder installation. All pertinent data for these computations are included in APPENDIX II.C.*

Station CAPTAIN 1967 was also occupied for the purpose of verifying local elevated stations used for hydrographic surveying. Station TWIN A 1930 was used as the initial station. The following five stations were verified by azimuth check:

*Removed from the original Descriptive Report and filed with the survey records.

STATION	AZIMUTH CHECK
BAYVILLE MUNICIPAL TANK	8.4"
GREAT CAPTAIN IS LH 1882	84.3"
STAMFORD HARBOR LH	78.3"
GREENS LEDGE LH	7.5"
EATONS NECK LH	2.4"

The excessive check noted at GREAT CAPTAIN IS LH is a function of the proximity of the two stations (70 meters), and the fact that the finial atop the lighthouse is now bent. Acceptable checks were observed between GREAT CAPTAIN IS LH and other stations from station FOX 1942. At more distant stations the finial itself would not present a problem in that the observer would center on the ball atop the cupola supporting the finial.

The large difference noted at STAMFORD HARBOR LH is a function of the partially blocked line of sight between the two stations. The observer thought he could see the center of the lighthouse through a gap in a group of trees on Greenwich Point. This was most likely not the case and a mispointing was made. However, an acceptable check at this station was achieved at station FOX 1942.

All computations pertinent to station CAPTAIN 1967 are shown in APPENDIX II.D, OBSERVATIONS AT CAPTAIN 1967.*

Station KALPAKJIAN was occupied on November 22, 1988, for the purpose of verifying local elevated stations used in the hydrographic survey. (Reference APPENDIX II.E, OBSERVATIONS AT KALPAKJIAN.)*

The following four stations were verified by azimuth check from KALPAKJIAN:

STATION	AZIMUTH CHECK
RYE	02.0"
GREAT CAPTAIN IS LH 1882	08.7"
STAMFORD HARBOR LH	05.0"
BAYVILLE MUNICIPAL TANK	04.8"

* Removed from the original Descriptive Report and filed with the original survey records.

I. AUTOMATED DATA PROCESSING

All hydrographic and side scan sonar data acquisition and processing was accomplished using the HDAPS hardware and the most recent version of the Navitronic NAVISOFT 300 software provided to the ship. This software is still under development and some problems do exist.

The positioning algorithm occassionally generates a "flyer" which causes the plotter sheet to scroll in an unpredictable manner. HECK personnel tried unsuccessfully to edit these "flyers" in the nightly processing. Therefore, the plotter continued to scroll even in the offline data processing mode.

Coordinates for control stations are altered by the software after they have been entered. This problem is most likely caused by rounding errors in the GP > MTM > GP conversion process. The potential errors are quite small (decimeter). However, users must be aware that the error is introduced by the software and that the coordinates were originally entered correctly.

Another problem with the NAVITRONIC software is that once a new raw data tape has been created, any data subsequently logged onto a previous tape is tagged with the latest data tape number. This "glitch" is significant in that the HECK sometimes works on two or more survey sheets in a single day; each survey is logged onto its own raw data tape.

MARTEK velocity cast data was processed on the ship's IBM-PC XT using program VELOCITY.

Geodetic computations were performed on the ship's IBM-PC XT using the MTEN ENHANCEMENTS routines which were obtained from the National Geodetic Survey.

J. COMPARISON WITH CHARTS PRIOR SURVEYS - See also sections 6. and 7. of the Evaluation Report.

J1. Comparison With Chart 12367 - See also section 7.a. of the Evaluation Report.

NOS Chart 12367, Greenwich Point to New Rochelle, 17th Edition, Nov.1/86, is the most recent edition of the largest scale chart which covers the area surveyed.

This survey was compared to the chart in the following manner: the HDAPS system was used to generate a 1:20000 scale plot which was used as a direct overlay onto the chart. Two such plots were made. Each plot showed only the depths at the fixes of either the first or second 100% SSS coverage lines. Selection of only the fixes resulted in a sounding density of about 2 soundings per square centimeter at 1:20000. (These overlays are submitted as part of the survey records for this survey.)

Sea state correctors were not applied to survey depths as the HDAPS system is not capable of automatically applying HIPPY correctors to data acquired in the SSS mode. However, because sea state was generally less than one foot (DOY 237 had sea state of about two feet), HECK personnel feel that this technique is adequate for performing a general chart comparison. All survey depths were corrected for predicted tides.

The chart and the survey are in good general agreement. Two discrete soundings on the chart were found to be about eight feet shoaler than the present survey depths. These soundings are shown as the first two on the table below.

The last four soundings on the table represent an area about one mile off the north coast of Long Island Sound between Matinecock and Fox Points. This area is significant in that the survey depths are shoaler than the charted depths by about 5 feet. These discrepencies do not represent hazards to navigation in that the general water depths are about 50 feet. However, heavy tugboat traffic was observed in the area throughout the time that the HECK was conducting survey operations.

Some of the charted soundings in this area appear to have been taken from Survey H-1732; this prior survey was conducted in 1886. No attempt was made to resolve the discrepencies due to the fact that a basic hydrographic survey is scheduled for the area within the next two years.

LATITUDE (NAD27)	LONGITUDE	SOURCE	CHART DEPTH	SURVEY DEPTH
~~40° 58.65'~~	~~73° 38.20'~~	H-5402a (1933)	~~20'~~	~~28'~~ disregard
40° 57.00'	73° 37.60'	UNKNOWN	49'	57'-58'
40° 55.82'	73° 38.05'	UNKNOWN	49'	~~55~~ 53'-55'
40° 55.20'	73° 37.50'	UNKNOWN	63'	~~55~~ 53'-54'
40° 55.20'	73° 37.00'	H-1732 (1886)	54'	48'-49'
~~40° 55.05'~~	~~73° 37.45'~~	H-1732 (1886)	~~60'~~	~~55'~~ disregard
40° 55.30'	73° 36.52'	H-1732 (1886)	49'	45'-46'

J2. Comparison With Survey 5402a - See also section 6.a. and 6.b. of the Evaluation Report.

Survey 5402a is a 1:10000 scale survey conducted in 1933.

Only one sounding line from the prior survey falls in the area of the present survey. This sounding line lies about one mile south of Great Captain Island. The present survey is about 4 feet shallower than the prior.

LATITUDE (NAD27)	LONGITUDE	PRIOR	PRESENT
40° 57.65'	73° 37.10'	55'	51'

J3. Comparison with 1732a

Survey 1732a is a 1:20000 scale survey conducted in 1914. The entire area of the present survey is covered by the prior survey.

Generally, the agreement between the surveys is good; about two feet. The following discrepencies of greater than two feet were noted:

LATITUDE (NAD27)	LONGITUDE	PRIOR	PRESENT
40° 57.70'	73° 37.50'	52'	47'-5ϕ'
40o 56.90'	73° 36.75'	54'	59'58'-6ϕ'
40° 55.60'	73° 38.40'	53'	56'54'-55'

J4. Comparison With 1732

Survey 1732 is a 1:20000 survey conducted in 1886. The depths on this survey are plotted in fathoms. The entire area of the present survey is covered by the prior.

The two surveys agree very well with most depths agreeing within two feet. The only area of significant disagreement is located about one mile northeast of Matinecock Point. The present area is shoaler than the prior by four to seven feet. The following specific comparisons illustrate the discrepencies:

LATITUDE (NAD 29)	LONGITUDE	PRIOR	PRESENT
40° 55.00'	73° 37.50'	63'	56'
40° 55.00'	73° 37.00'	54'	50'
40° 55.20'	73° 37.00'	54'	50'

K. AWOIS ITEM INVESTIGATION REPORTS

Ten AWOIS items were investigated on the sheets covered by this report. Each item is discussed individually in the remaining text. Multiple contacts were sometimes investigated within the search radius of an item. If more than one contact was investigated, each is discussed separately as a subsection of the appropriate AWOIS item.

SSS imagery covering each contact is abstracted on the TARGET ABSTRACT (See APPENDIX IV). Reconnaissance SSS imagery using the 50 meter range scale was often acquired of a target before diving. These reconnaissance lines were not smooth plotted. However, the TARGET ABSTRACT correlates the reconnaissance images to the targets by fix numbers.

The following table summarizes the results of the investigations.

AWOIS ITEM	STATUS
1737	DISPROVED ✓
1739	RESOLVED ✓
1740	DISPROVED ✓
1741	RESOLVED ✓
1743	RESOLVED ✓
1745	RESOLVED ✓
4407	DISPROVED ✓
4411	DISPROVED ✓
6490	RESOLVED ✓
6491	DISPROVED ✓

K 1. INVESTIGATION REPORT FOR AWOIS ITEM 1737

AWOIS HISTORY : H5078/30WD -- Proj. No. 64; Touched bottom at 40 feet. Cleared to 40 feet., Not identified as an obstruction, probably shoal, general area deeper by 51 feet. LL sounding position scaled in LAT 40° 55' 25.8" ; LONG 073° 37' 44.9" (NAD27)

SURVEY REQUIREMENTS : Full, verify or disprove through 200% side scan sonar coverage, 200 meter radius. If SSS investigation determines that this item is a shoal, fully develop with echosounder to the full extent and determine least depth of shoal.

METHOD OF INVESTIGATION : The specified search radius was investigated by Side Scan Sonar; the 100 meter range scale and the 100 khz frequency settings were used. Two hunderd percent coverage was achieved by running two sets of three lines each at orthogonal angles. Hydrographic lines were also run over the reported position.

RESULTS OF INVESTIGATION : Six Side Scan Sonar lines were run in the vicinity of the reported position and are shown on sheet HE-10-2-88. Two targets were identified in the area: target 6; and target 8 (also shown as target 24). Both targets were considered to be insignificant for further development.

In order to further assure that no shoal existed in the search area, the 160 meter side scan sonar line spacing was split to 80 meters with hydrographic lines. The hydrographic data are plotted on sheet HE-2.5-6-88. Smooth sheet HE-2.5-6-88 also shows the sounding data collected during side scan sonar acquisition. No evidence of any significant shoaling was found.

No diver investigations were conducted on this AWOIS item.

RECOMMENDATIONS : This item is charted on NOS Chart 12367, Greenwich Point to New Rochelle, 17th Edition, Nov. 1, 1986, as an obstruction cleared by wire drag to 40 feet.

Nothing of charting significance was found during this survey. The HECK recommends that the obstruction be removed from the chart.

AWOIS item 1737 is considered DISPROVED. See also section 6.b.1) of the Evaluation Report.

See sheet 2 of 14.

K 2. INVESTIGATION REPORT FOR AWOIS ITEM 1739

AWOIS HISTORY : NM43/61 -- Bronx Towing Line, Inc. Reported M-35 (Sand Scow) Sunk in 55 feet of water approx 1.5 miles north of Matinecock Point in LAT 40° 55' 39.7" ; LONG 073° 38' 01.5, PA (NAD 27)

SURVEY REQUIREMENTS : Full, verify or disprove through 200% side scan sonar coverage, 1000 meter radius. Least depth and position required if found.

METHOD OF INVESTIGATION : The specified search radius was investigated by Side Scan Sonar; the 100 meter range scale and the 100 khz frequency settings were used. Two hunderd percent coverage was achieved by running two sets of lines at orthogonal angles.

RESULTS OF INVESTIGATION : A total of 27 mainscheme SSS lines were run over the search radius. The lines are plotted on sheet HE-10-2-88. Targets 2 and 3 were further investigated using the 50 meter range scale. These reconnaissance lines are not shown on the smooth plots. Both targets were found to be insignificant and did not warrant diver investigation.

Target number 3 appears to be the wreckage of a small boat. The height measured on the SSS images was only about 2 feet.

Target number 9 was found about 150 meters outside of the specified search radius while investigating another AWOIS item, 6490. This contact fits the description and is probably the sand scow listed as AWOIS item 1739.

K 2.1 CONTACT INVESTIGATION REPORT TARGET NUMBER 9, 20

DETERMINATION OF DIVE SITE : The contact was identified by SSS survey and was labeled as contact numbers 9 and 20 on the target abstract. The HECK was maneuvered into the vicinity of the SSS contact. When evidence of the wreck showed on the fathometer, a dive buoy was deployed.

SEARCH PROCEDURE : Divers LT(jg) Beaver and LT Tuell descended the buoy line and found that the weight had fallen into the current scour on the starboard side of the wreck. A tagline was attached to the buoy weight and a circle search was performed in order to locate the wreck. The dive buoy was moved onto the wreck and a second circle search was conducted to locate the highest point on the wreck. The dive buoy was then moved to the high point.

LEAST DEPTH DATA : The pneumofathometer airline was lowered down the buoy line to the divers. The orifice of the airline was held over the highest point. ST Morris and AB Jones manned the pneumofathometer in the ship's SISU launch.
The dive was completed on **September 1, 1988 (DOY 245)**. Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004 N): Position Number 2325

1) TIME (UTC) :	1856	RAW LEAST DEPTH READING (FT)	:	60.2
2)	1856			60.4
3)	1856			60.4
		AVG LEAST DEPTH READING (FT)	:	60.3

MEASURED DEPTH : 60.3 FEET
TIDAL CORRECTOR : - 7.2
Pneu. Depth Gauge Corr: - 0.5
LEAST DEPTH : ~~53.1~~ 52.6 FEET

GENERAL STATEMENT OF POSITION QUALITY : The HECK was maneuvered into close proximity to the dive buoy. When evidence of the wreck was visible on the fathometer, FIX 2325 was taken. The position was determined using the HDAPS system and three MiniRanger LOP's. The maximum residual on the computed position was 4.3 meters and the error circle radius was 2.4 meters.

The HDAPS utility package was used to convert the MTM survey coordinates to geographic position.

POSITION OF CONTACT: LAT: 40° 56' 11.786" N
LONG: 073° 37' 39.863" W

LORAN CHAIN : 9960 RATES: W - 15353.4 ; X - 26893.1
Y - 43959.8 ; Z - 60003.8

ITEM DESCRIPTION : Divers found the remains of a 65 foot wooden barge resting upright on a muddy bottom in about 50 feet of water. The wreck is nearly rectangular with little curvature at the bow. At the stern there are the remains of two rudder posts or some rudder-like structure. The wreck is beginning to deteriorate. Several timbers are strewn about the stern. Some

wooden deck planking remains near the bow. The wreck is almost level on the bottom. There are several large metal mooring cleats on each side of the wreck. The least depth was found to be at one of the cleats near the stern of the barge.

RECOMMENDATIONS : This wreck is ~~not~~ presently charted.

The LORAN rates acquired over the wreck match closely with those given to the HECK by Mr. Richard Taracka, a diver with the Greenwich, Ct., Marine Police. Mr. Taracka stated that the wreck was a popular dive site and was known locally as "M-35".

This wreck rises 8 feet off the bottom in surrounding depths of about 61 feet. HECK recommends that this wreck be charted as a sunken wreck, not dangerous to surface navigation, with a known depth of ~~53~~ 52 feet. in the survey location and the charted sunken wreck, PA be deleted.

AWOIS item 1739 is considered RESOLVED. - Concur

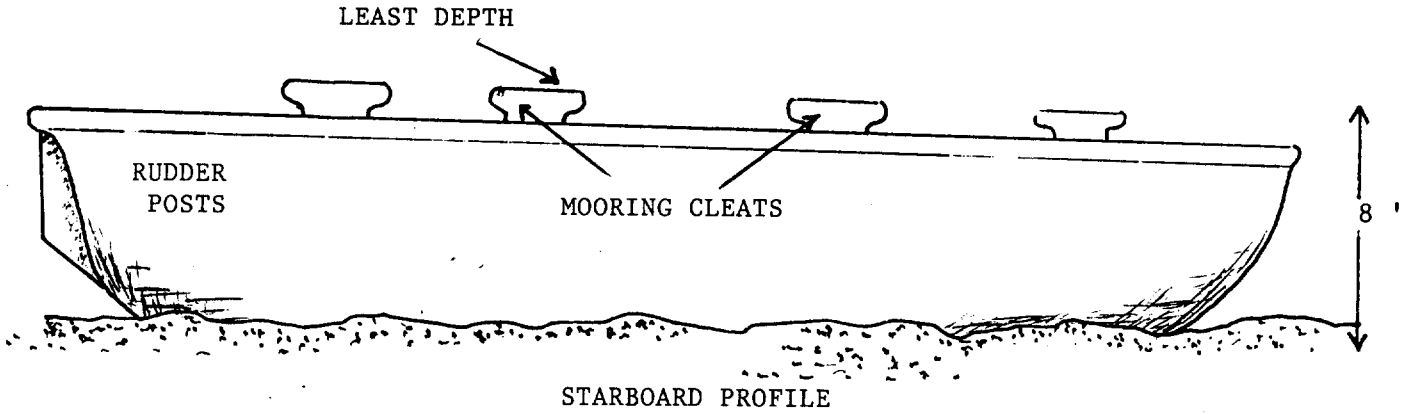
See sheet 3 of 14

AWOIS ITEM 1739

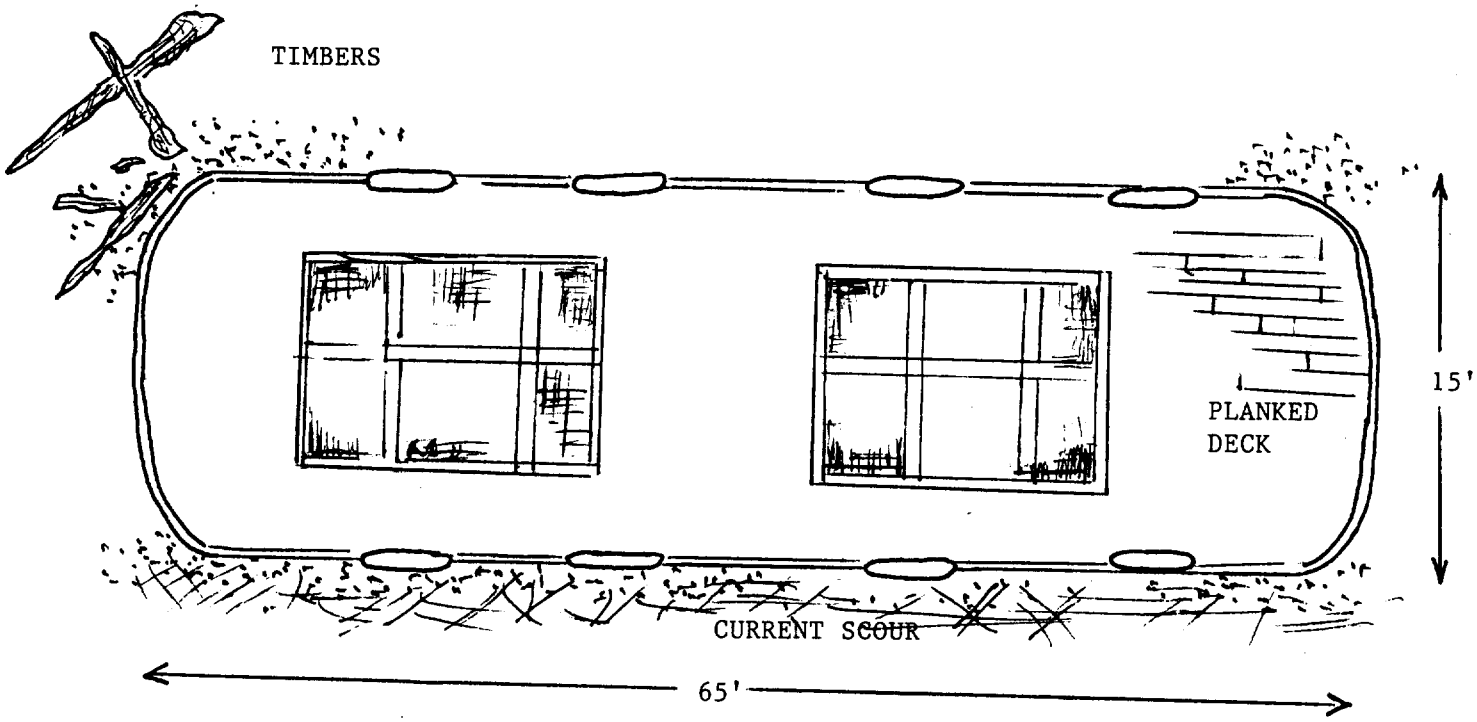
SSS CONTACT 9

TIME: SEPTEMBER 1, 1988 14:56 LMT (18:56 GMT)

PNEUMOFATHOMETER DEPTH	=	60.3 FEET
TIDAL CORRECTOR	= -	7.2
Pneu. Depth Gauge Corr	= -	~~0.5~~
LEAST DEPTH OVER WRECK	=	~~53.1~~ FEET 52.6



STARBOARD PROFILE



AWOIS ITEM 1739

SSS CONTACT 9

FIX 1035 + 5 P

65' WOODEN BARGE WITH SQUARED BOW
AND STERN. RESTING UPRIGHT IN ~~53~~ 52 FEET.

100M
5
100M
5 14:54:34 1037
00M
5
00M
5
00M 14:54:20
5
00M
5
00M 14:54:06
5
100M
5
100M
5 14:53:53
100M
5
100M
5
100M 14:53:37
5
100M
5
100M
5 14:53:24
100M
5
100M
5 14:53:10 1036
100M
5
100M
5
100M 14:52:56
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5
100M 14:52:42
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100
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100M
5
100M 14:52:27
5
100M
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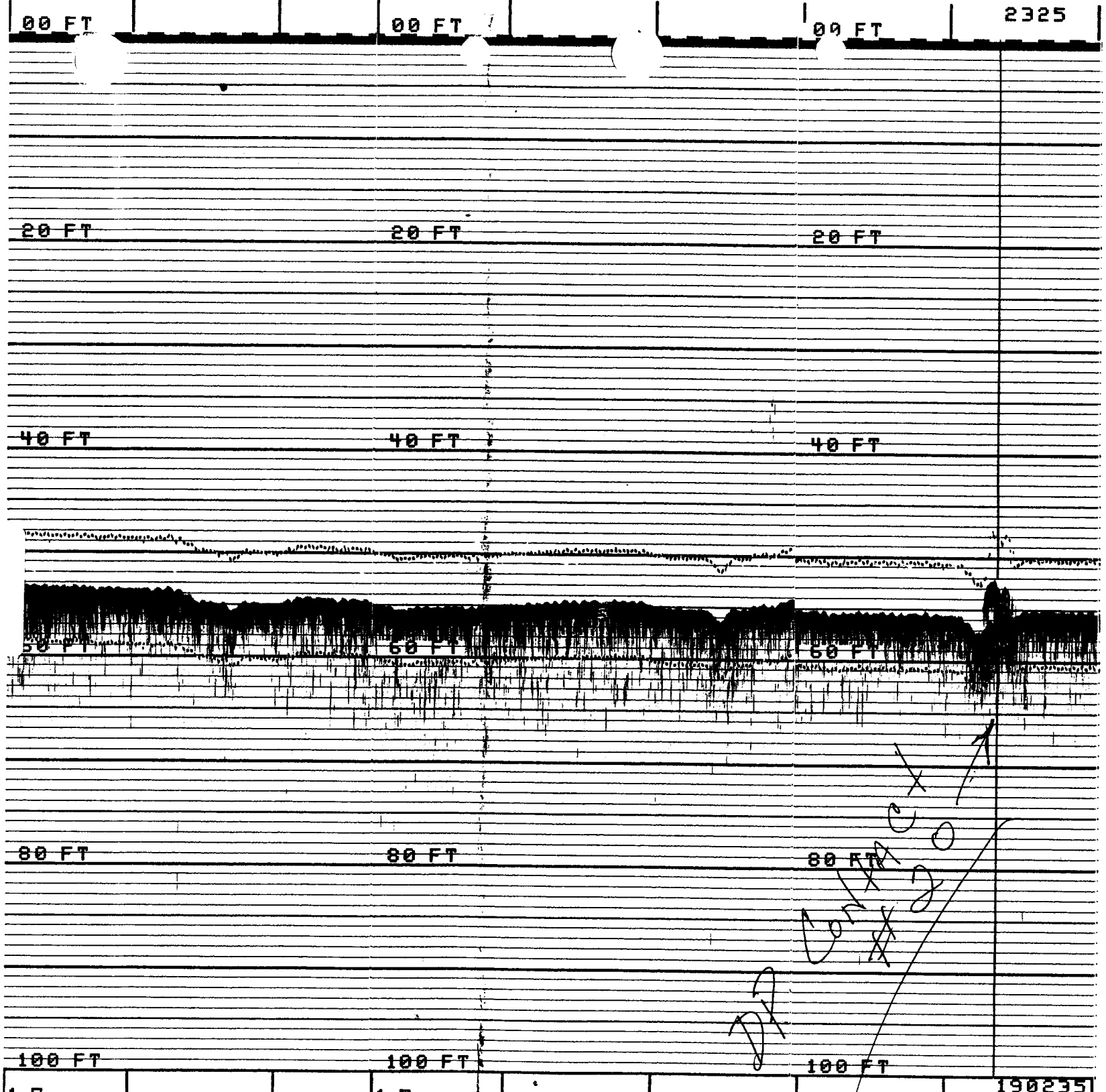

00 FT
00 FT
00 FT
2325
20 FT
20 FT
20 FT
40 FT
40 FT
40 FT
60 FT
60 FT
80 FT
80 FT
80 FT
100 FT
100 FT
100 FT
190235

NAVISOFT 300 VER 2.31EX-SURVEY: UTILITIES: MTM -> LAT/LON 9

t 18:56:19

Easting.....: 103278.2
Northing.....: 20723.2

Latitude.....: 040:56:11.786
Longtitude.....: 073:37:39.863

User 1 Caps Running

HELP Dump Alpha Dump Graphics

Day	Time	Tide Corr. Units FEET
245	18:00	-5.6
245	18:06	-5.8
245	18:12	-6.0
245	18:18	-6.2
245	18:24	-6.3
245	18:30	-6.5
245	18:36	-6.6
245	18:42	-6.8
245	18:48	-6.9
245	18:54	-7.1
245	19:00	-7.2
245	19:06	-7.3
245	19:12	-7.4
245	19:18	-7.5
245	19:24	-7.6
245	19:30	-7.6
245	19:36	-7.7
245	19:42	-7.7
245	19:48	-7.8
245	19:54	-7.8
245	20:00	-7.8
245	20:06	-7.8
245	20:12	-7.8
245	20:18	-7.8
245	20:24	-7.8
245	20:30	-7.7
245	20:36	-7.7
245	20:42	-7.6
245	20:48	-7.6
245	20:54	-7.5
245	21:00	-7.5
245	21:06	-7.4

NOT ACCEPTED

K 3. INVESTIGATION REPORT FOR AWOIS ITEM 1740

AWOIS HISTORY : H5078/30WD -- Proj No. 64; 40FT Hang, obstruction, (touch bottom), in LAT 40° 55' 47.98", LONG 73° 35' 29.06", (not charted). Two touch bottoms are located in LAT 40° 55' 48", LONG 73° 35' ~~29.06"~~ 36.00" ; and LAT 40° 55'54", LONG 73° 35' 28.0". (NAD 27)

SURVEY REQUIREMENTS : Full, verify or disprove through 400% side scan sonar coverage, 200 meter radius, least depth and position required if found.

METHOD OF INVESTIGATION : The specified search radius was investigated by Side Scan Sonar; The 100 meter range scale and the 100 khz frequency settings were used. Four hundred percent coverage was achieved by running four sets of four lines at orthogonal angles.

RESULTS OF INVESTIGATION : A total of 16 mainscheme SSS lines were run over the search area. These SSS lines are shown on HE-10-2-88. No significant contacts were identified.

RECOMMENDATIONS : The two wire drag touch bottoms are charted as obstructions cleared by 41 feet by wire drag on NOS Chart 12367, Greenwich Point to New Rochelle, 17th ED., Nov. 1, 1986.

This survey found no evidence of obstructions in the AWOIS search radius. The HECK recommends that the obstructions be removed from the chart.

AWOIS item 1740 is considered DISPROVED. - See also section 6.b.2) of the Evaluation Report.

See sheet 4 of 14.

K 4. INVESTIGATION REPORT FOR AWOIS ITEM 1741

AWOIS HISTORY : H5078/30WD -- Proj No. 64; Wreckage, 32FT, (charted as wreck cleared 31FT) Position: LAT: 40° 55' 52.5"; LONG: 073° 36' 13.90. Wreck is in 47 feet of water on a soft mud bottom. (NAD 27)

SURVEY REQUIREMENTS : Full, Verify or disprove through 200% side scan sonar coverage, 75 meter radius, least depth and position required if found.

METHOD OF INVESTIGATION : The specified search radius was investigated by Side Scan Sonar; the 100 meter range scale and 100 khz frequency settings were used. Two hundred percent coverage was achieved by running two sets of three SSS lines each at orthogonal angles. Divers investigated the single significant contact identified.

RESULTS OF INVESTIGATION : Six Side Scan Sonar lines were run in the immediate vicinity of the reported position of the item. These SSS lines are shown on both the field survey sheets and the smooth plots for HE-10-2-88. One significant contact was identified and is listed as Target 14 and 25 in the target abstract.

K 4.1 CONTACT INVESTIGATION REPORT TARGET NUMBER 14 , 25

DETERMINATION OF DIVE SITE : The contact was originally identified by Side Scan Sonar and is listed as contacts 14 and 25 in the target abstract. HECK was maneuvered into the vicinity of the side scan sonar target. When the wreck was visible on the DSF 6000 fathometer, a dive buoy was deployed.

SEARCH PROCEDURE : Divers Lt(jg) Beaver and LT Tuell descended the buoy line and found that the weight had fallen into the wreck. The divers swam the length of the wreck to locate the highest point.

LEAST DEPTH DATA : The pneumofathometer airline was lowered down the buoy line to the divers. The orifice of the airline was held over the least depth. ST Morris and AB Jones manned the pneumofathometer in the ship's Sisu launch.

The dive was completed on August 30 1988 (DOY 243). Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004 N): Position Number 2286

1) TIME (UTC) : 1900	RAW LEAST DEPTH READING	(FT) :	53.8
2) : 1900		:	54.2
3) : 1900		:	54.0

AVERAGE LEAST DEPTH READING (FT) : 54.0

AVERAGE LEAST DEPTH (FT) : 54.0
TIDE CORRECTOR (FT) : ~~-8.2~~ 7.8
Pneu. Depth Gauge Corr : -0.4

LEAST DEPTH (FT) : 45.8 ✓

GENERAL STATEMENT OF POSITION QUALITY : The wreck was positioned by maneuvering the HECK into the vicinity of the dive buoy which had been placed on the high point by the divers. Detached position 2286 was acquired as the position of the least depth. This fix was obtained using four MiniRanger lines of position with a maximum residual of 2.4 meters and a 95% confidence error circle radius of 1.6 meters.

POSITION OF CONTACT : LAT : 040° 55' 53.418 N
LONG : 073° 36' 13.840 W

LORAN CHAIN : 9960 RATES : W-15345.0 X-26880.2
Y-43954.9 Z-60004.1

ITEM DESCRIPTION : The divers discovered the broken and deteriorated remains of a 100 by 25 foot steel hulled vessel. The only prominent feature remaining is the lower portion of the hull and the attached ribbing. The vessel is in the latter stages of decomposition and is sunken into the bottom. The vessel's origin and purpose were not determined. The wreck is a popular dive site and is known locally as the "Baby Doll".

RECOMMENDATIONS : This wreck was found very close to the reported position of AWOIS item 1741, and is deemed to be that item.

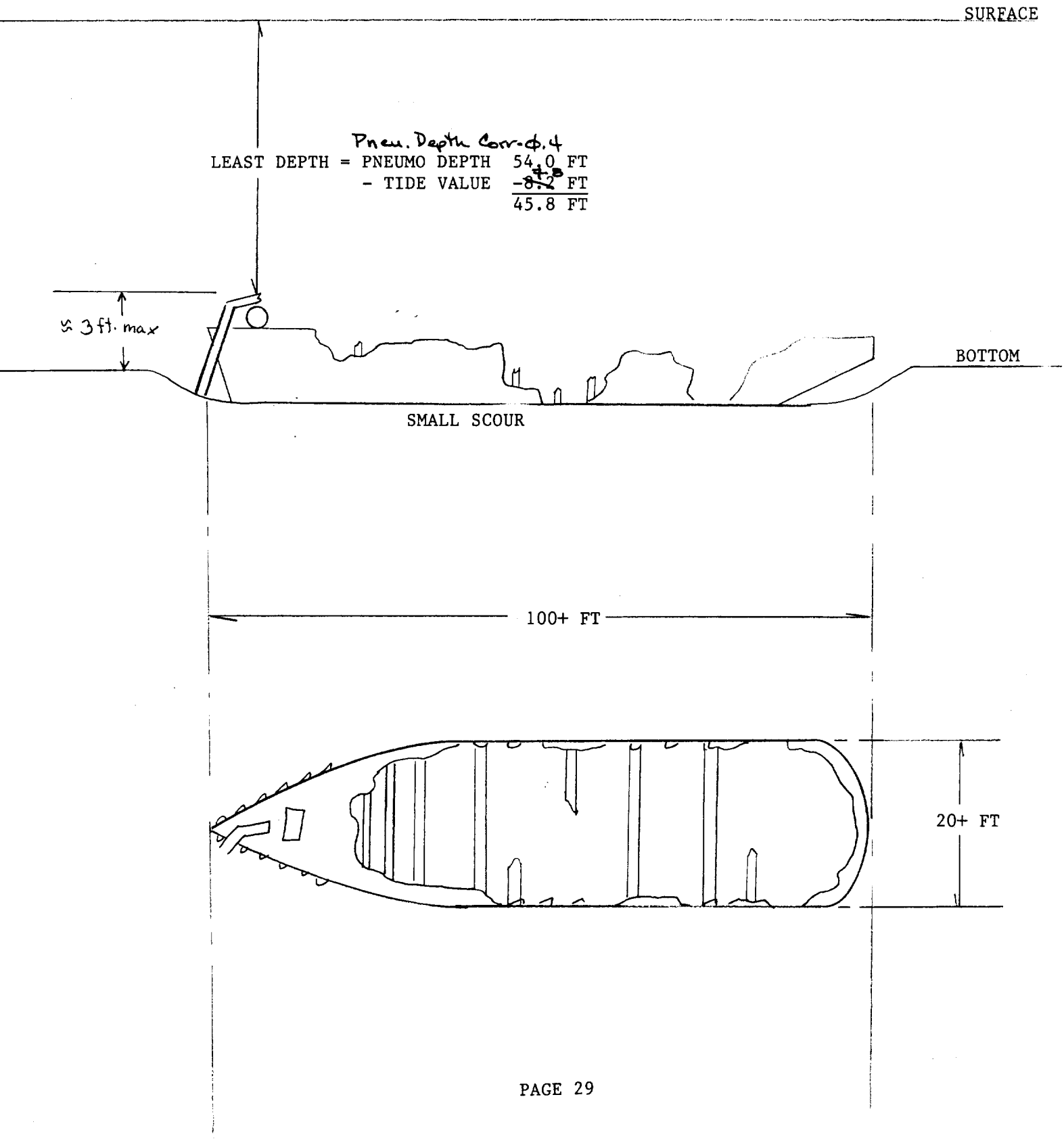
The wreck is presently charted on NOS Chart 12367, 17th ED., Nov. 1986, as a wreck cleared by wire drag to 31 feet. The wreck now rises only about 3 feet above the general trend of the bottom. It is not a danger to surface navigation. The HECK recommends that the wreck be charted in the future as a submerged wreck, not dangerous to surface navigation, with a known depth of ~~45~~ 46 feet.

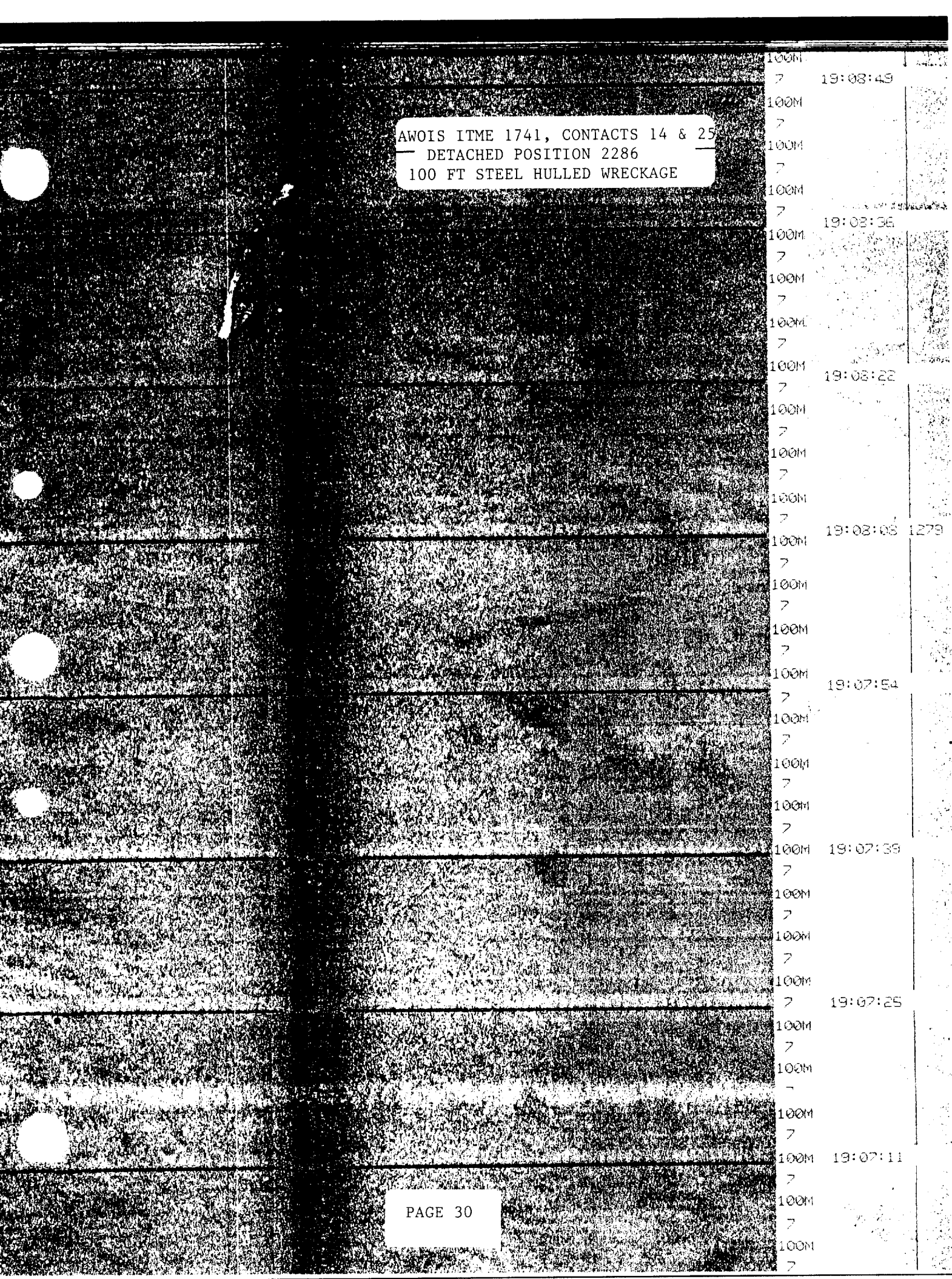
AWOIS item 1741 is considered RESOLVED. Concur

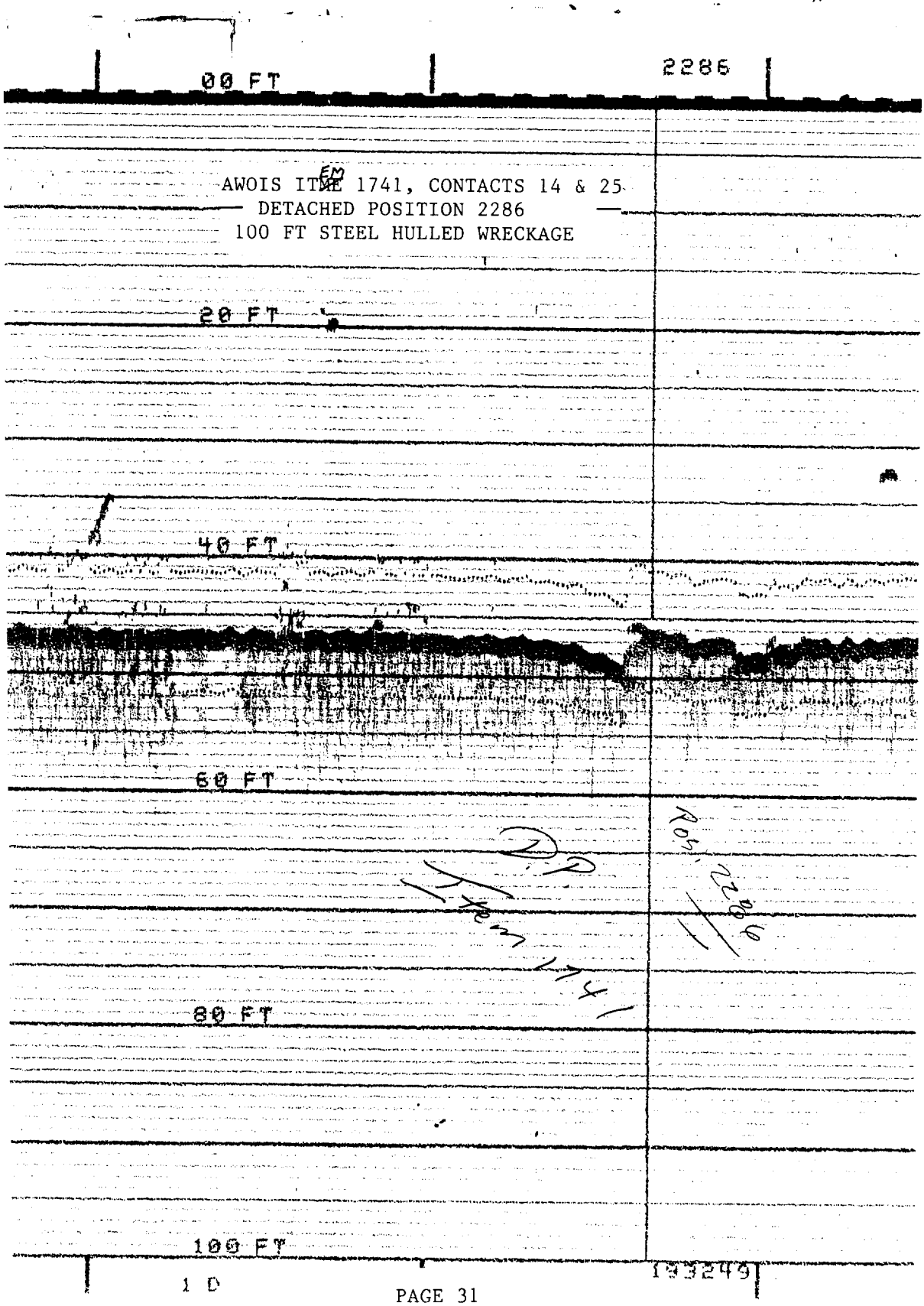
See sheet 5 of 14

AWOIS ITEM #1741
CONTACTS 14, 25
CSTN NUMBER 009

DIVERS : LT TUELL, LT(jg) BEAVER
METHOD OF SEARCH : CIRCLE
LEAST DEPTH DETERMINATIO : PNUEMO




AWOIS ITME 1741, CONTACTS 14 & 25
DETACHED POSITION 2286
100 FT STEEL HULLED WRECKAGE
100M
?
19:08:49
19:08:36
19:08:22
19:08:08 1279
19:07:54
19:07:39
19:07:25
19:07:11


00 FT
2286
AWOIS ITEM 1741, CONTACTS 14 & 25
DETACHED POSITION 2286
100 FT STEEL HULLED WRECKAGE
20 FT
40 FT
60 FT
80 FT
100 FT
1 D
193249

NAVISOFT 300 VER 2.31EX-SURVEY: UTILITIES: MTM -> LAT/LON 9 Oct 10:27

Easting.....: 105290.9_
Northing.....: 20157.8

Latitude.....: 040:55:53.419
Longtitude.....: 073:36:13.841

User 1 Caps Running

HELP Dump Alpha Dump Graphics

Day	Time	Tide Corr.	Units	FEET
243	17:00	-7.5		
243	17:06	-7.6		
243	17:12	-7.8		
243	17:18	-7.9		
243	17:24	-8.0		
243	17:30	-8.1		
243	17:36	-8.2		
243	17:42	-8.3		
243	17:48	-8.4		
243	17:54	-8.4		
243	18:00	-8.5		
243	18:06	-8.5		
243	18:12	-8.5		
243	18:18	-8.5		
243	18:24	-8.5		
243	18:30	-8.5		
243	18:36	-8.4		
243	18:42	-8.4		
243	18:48	-8.3		
243	18:54	-8.3		
243	19:00	-8.2		
243	19:06	-8.1		
243	19:12	-8.0		
243	19:18	-8.0		
243	19:24	-7.8		
243	19:30	-7.7		
243	19:36	-7.6		
243	19:42	-7.5		
243	19:48	-7.3		
243	19:54	-7.2		
243	20:00	-7.1		
243	20:06	-6.9		

K 5 INVESTIGATION REPORT FOR AWOIS ITEM 1743

AWOIS HISTORY : H5142/31WD -- Proj. No. 64; Wreckage 40Ft. (Charted as a wreck cleared to 37Ft) Position: LAT: 40° 56' 21" ; LONG: 073° 34' 54". (NAD 27)

SURVEY REQUIREMENTS : Full, Verify or disprove through 200% side scan sonar coverage, 75 meter radius, least depth and position required if found.

METHOD OF INVESTIGATION : The specified search radius was investigated by Side Scan Sonar; the 100 meter range scale and 100 khz frequency settings were used. Two hundred percent coverage was achieved by running two sets of three SSS lines each at orthogonal angles. Divers investigated the single significant contact identified.

RESULTS OF INVESTIGATION : Four Side Scan Sonar lines were run in the immediate vicinity of the reported position of the item. These SSS lines are shown on both the field survey sheets and the smooth plots for HE-10-2-88. One significant contact was identified and is listed as Target 16 in the target abstract.

K 5.1 CONTACT INVESTIGATION REPORT TARGET NUMBER 16

DETERMINATION OF DIVE SITE : The contact was identified by SSS survey and was labeled as contact number 16 in the target abstract. The target was found very close to the reported position of the AWOIS item. The HECK was maneuvered over the SSS position of the target. When evidence of the wreck was visible on the echosounder, a dive buoy was deployed.

SEARCH PROCEDURE : Divers LT(jg) Beaver and LT Tuell descended the buoy line and found that the weight had landed in the bow of the wreck. A tagline was attached to the buoy weight and a circle search was performed around the wreckage in order to locate the highest point.

LEAST DEPTH DATA : The pneumofathometer airline was lowered down the bouy line to the divers. The orifice of the line was held over the least depth. ST Morris and AB Jones manned the pneumofathometer in the ship's SISU launch.

The dive was completed on **August 31, 1988 (DOY 244)**. Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004 N): Position Number 2287

1) TIME (UTC) :	1332	RAW LEAST DEPTH READING (FT) :	48.0
2)	1332		48.0
3)	1332		48.0
		AVG LEAST DEPTH READING (FT) :	48.0

MEASURED DEPTH : 48.0 FEET
TIDAL CORRECTOR : + 0.6
Pneu. Depth Gauge Corr: - 0.2
LEAST DEPTH : ~~48.6~~ 47 FEET

GENERAL STATEMENT OF POSITION QUALITY : The wreck was positioned by maneuvering the HECK into the vicinity of the dive buoy which had been placed over the high point by the divers. When evidence of the wreck was visible on the fathometer, FIX 2287 was taken over the wreck. This position was acquired using the HDAPS system and four MiniRanger LOP's. The maximum residual on the adjusted position was 3.9 meters and the 95% confidence error circle radius was 1.8 meters.

POSITION OF CONTACT: LAT: 40° 56' 21.252" N
LONG: 073° 34' 52.966" W

LORAN CHAIN : 9960 RATES: W - 15336.1 ; X - 26870.6
Y - 43957.2 ; Z - 60007.3

The HDAPS utility program was used to transform MTM survey coordinates to geographic position.

ITEM DESCRIPTION : The divers found a badly deteriorated wooden wreck resting upright on a muddy bottom in about 50 feet. The wreck timbers are heavily encrusted with marine growth. The highest part of the wreck is at the stern; the stern is about three feet above the floor of the sound. The wreck measures about 25 feet by 75 feet.

Divers noted an abundance of small bass and flounder and mature lobster.

RECOMMENDATIONS : This wreck was found very close to the reported position of the AWOIS item and is deemed to be the wreck in question.

The wreck is charted on NOS Chart 12367, 17th ED., Nov. 1986, as a wreck cleared by wire drag, depth 37 feet. This survey determined the least depth over the wreck to be 11 feet deeper than the charted depth. The wreck does not present a danger to navigation; it rises only about 3 feet off the bottom. However, the wreck should be charted for its value to local fishermen and sport divers. The HECK recommends that the wreck be charted at the position determined by this survey and that its symbol be changed to show a sunken wreck , not dangerous to surface navigation, with known depth of ~~48~~ 47 feet.

AWOIS item 1743 is considered **RESOLVED**.

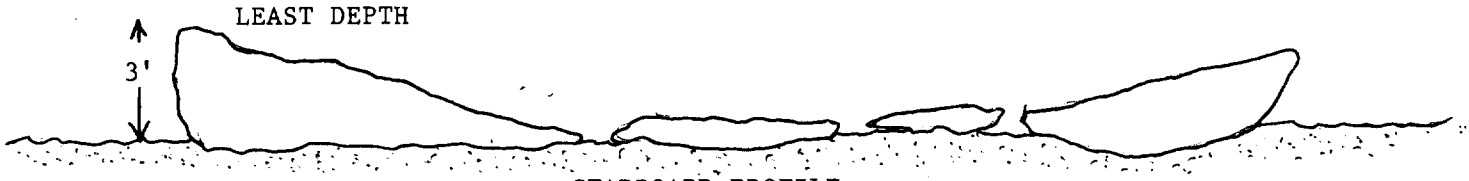
See sheet 6 of 14

AWOIS ITEM 1743

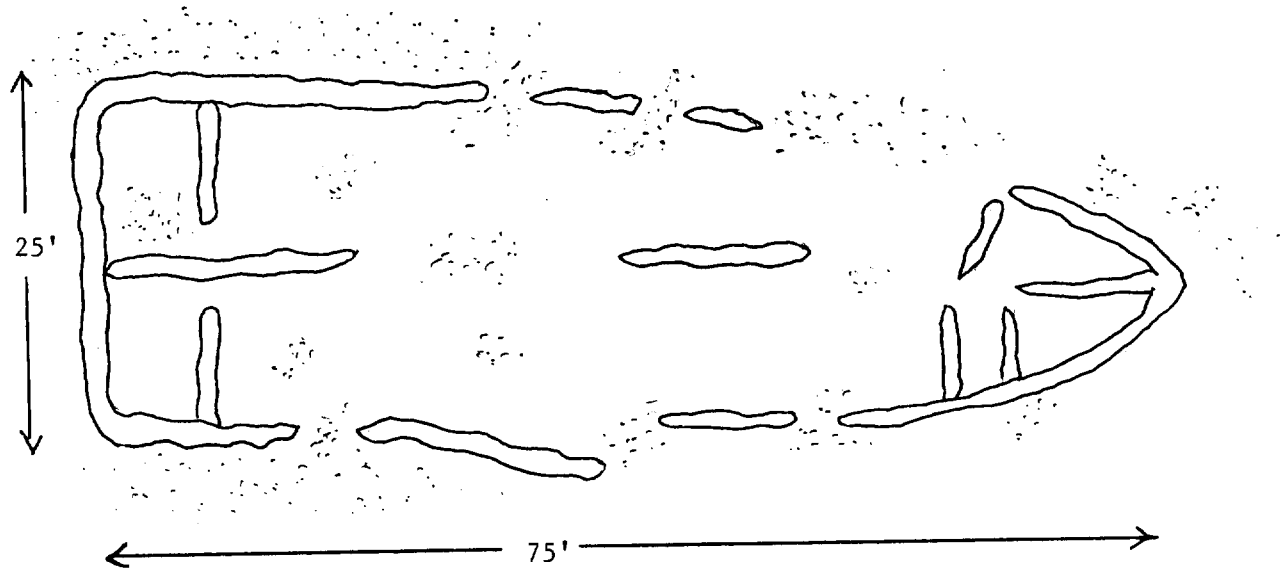
SSS CONTACT 16

TIME: AUGUST 31, 1988 09:32 LMT (13:32 GMT)

PNEUMOFATHOMETER DEPTH	=	48.0 feet
TIDAL CORRECTOR	= +	0.6
Pneu. Depth Gauge Corr	= -	0.2
LEAST DEPTH OVER WRECK	=	~~48.6~~ 47 feet



STARBOARD PROFILE



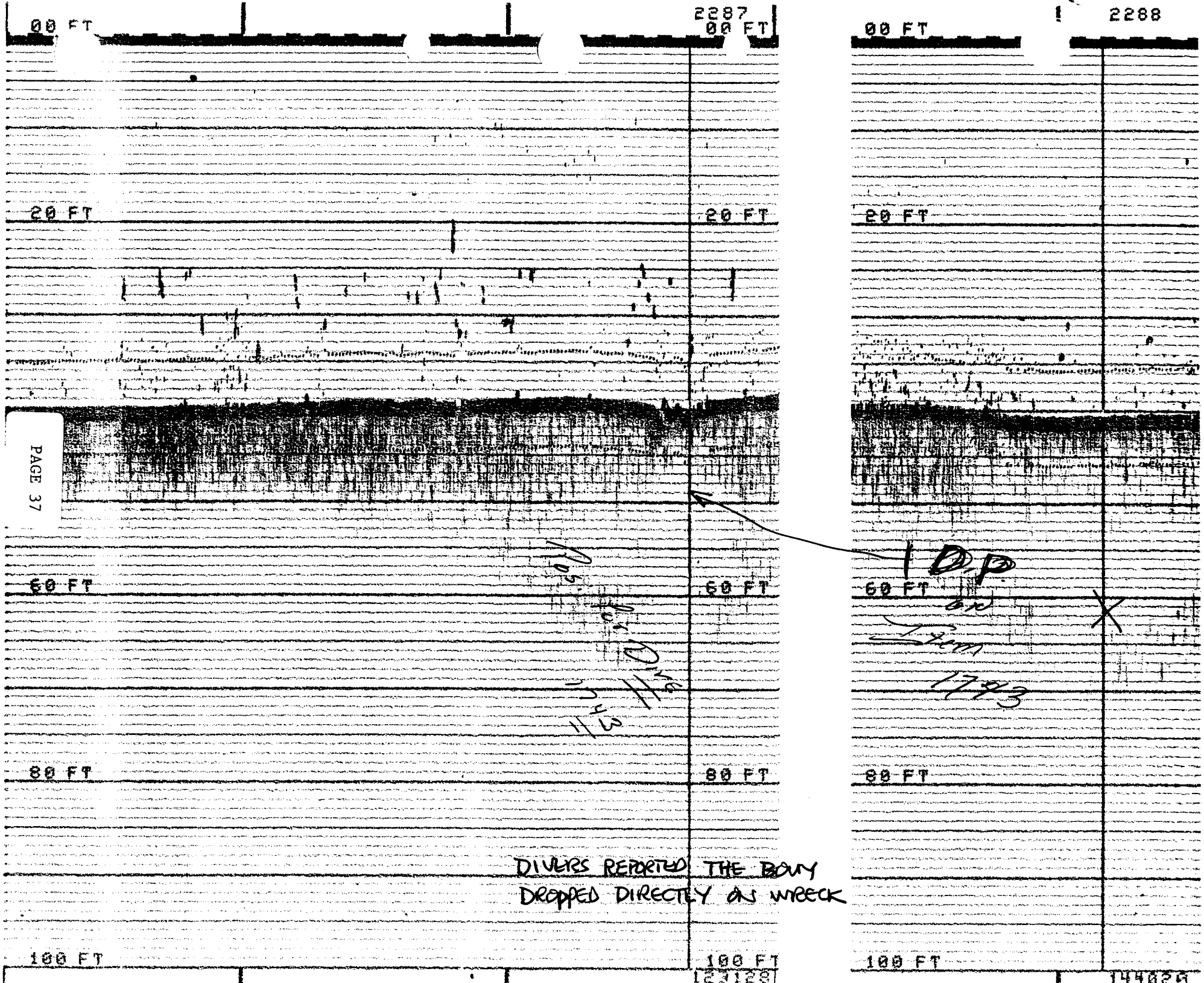
#16

AWOIS 1743 SSS CONTACT 16

FIX 1472 + 3S

DETERIORATED WOODEN WRECK ABOUT 75 FEET LONG, RESTING UPRIGHT IN 50 FEET. LEAST DEPTH ~~48~~ 47 FEET.

4 100M 4 100M 4 100M 4 18:29:0 100M 4 100M 4 100M 4 100M 4 18:28:4 100M 4 100M 4 100M 4 100M 4 18:28:3 100M 4 100M 4 100M 4 100M 4 18:28: 100M 4 100M 4 100M 4 100M 4 18:28: 100M 4 100M 4 100M 4 100M 4 18:27: 100M 4 100M 4 100M 4 100M 4 18:27: 100M 4 100M 4 100M 4 100M 4 100M


00 FT
2287
00 FT
2288
00 FT
20 FT
20 FT
20 FT
PAGE 37
60 FT
60 FT
60 FT
80 FT
80 FT
80 FT
DIVERS REPORTED THE BOUY
DROPPED DIRECTLY ON WRECK
100 FT
100 FT
100 FT

NAVISOFT 300 VER 2.31EX-SURVEY: UTILITIES: MTM -> LAT/LON 9

19:13:42

Easting.....: 107182.1_
Northing.....: 21018.0

Latitude.....: 040:56:21.252
Longtitude.....: 073:34:52.966

User 1 Caps Running

HELP Dump Alpha Dump Graphics

Day	Time	Tide Corr. Units FEET
244	13:00	.5
244	13:06	.6
244	13:12	.6
244	13:18	.6
244	13:24	.6
244	13:30	.6 ←
244	13:36	.6
244	13:42	.5
244	13:48	.5
244	13:54	.4
244	14:00	.3
244	14:06	.2
244	14:12	.1
244	14:18	0.0
244	14:24	-.1
244	14:30	-.3
244	14:36	-.4
244	14:42	-.6
244	14:48	-.7
244	14:54	-.9
244	15:00	-

K 6. INVESTIGATION REPORT FOR AWOIS ITEM 1745

AWOIS HISTORY : CL122/40 -- COE; Oil Barge , 116 FT L, 18 FT W, 9.6 FT D; 38.5 LD on stack and flagpole. Position: LAT: 40° 57' 22.5"; LONG: 073° 37' 29.3". (NAD 27)
CL1095/86 -- Private diver confirms wreck. Position: LAT: 40° 57' 22.5" ; LONG: 073° 37' 09.0" (converted from LORAN rates). (NAD 27)

SURVEY REQUIREMENTS : Full, Verify or disprove through 200% side scan sonar coverage, 700 meter radius, least depth and position required if found.

METHOD OF INVESTIGATION : The specified search radius was investigated by Side Scan Sonar; the 100 meter range scale and 100 khz frequency settings were used. Two hundred percent coverage was achieved by running two sets of SSS lines at orthogonal angles. A total of 21 mainscheme SSS lines were run to cover the search radius. Divers investigated the single significant contact identified.

RESULTS OF INVESTIGATION : SSS lines are shown on both the field survey sheets and the smooth plots for HE-10-2-88. One significant contact was identified and is listed as Target 13 and 18 in the target abstract. Divers investigated this contact and found a 120 foot steel wreck which fits the description of the AWOIS item.

This wreck was chosen as a test of side scan sonar imaging quality and of hydrographic line spacing requirements for least depth determination. During hydrographic data acquisition, the HECK passed directly over the mast of the wreck. The position of the wreck was taken from the hydrographic data. All hydrographic data are plotted sheet on HE-1-5-88.

K 6.1 CONTACT INVESTIGATION REPORT TARGET NUMBER 13, 18

DETERMINATION OF DIVE SITE : The target was identified by side scan sonar and listed as target 13 and 18 in the target abstract. The wreck was found very close to the reported position of the AWOIS item. The HECK found that local divers had attached a green and white buoy marked "WK" to the wreck.

SEARCH PROCEDURE : Divers LT(jg) Beaver and LT Tuell descended the buoy line and found that the buoy was attached to a crucible bit near the bow of the wreck. A tagline was attached to the crucible, and the divers swam the length of the wreck in order to locate the highest point.

LEAST DEPTH DATA : The divers visually located the high point and then returned to the surface to retrieve the pneumofathometer airline. The orifice of the airline was then held over the high point. ST Morris and AB Jones manned the pneumofathometer in the ship's SISU launch.

The dive was completed on **August 31, 1988 (DOY 244)**. Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004 N): Position Number 2296

1) TIME (UTC) :	1835	RAW LEAST DEPTH READING (FT)	:	47.4
2)	1835			47.4
3)	1835			47.4
		AVG LEAST DEPTH READING (FT)	:	47.4

MEASURED DEPTH : 47.4 FEET
TIDAL CORRECTOR : - 8.0
Pneu. Depth Gauge Corr: - 0.2
LEAST DEPTH : 39.2 FEET

GENERAL STATEMENT OF POSITION QUALITY : This wreck's position was determined hydrographically while conducting tests of line spacing requirements. Fathometer records indicate that the HECK passed directly over the mast of the wreck at position 2519 +1 . Four MiniRanger LOP's were acquired. The maximum residual on the computed position was 0.8 meters and the 95% confidence error circle radius was 3.3 meters.

These coordinates differ by 6.9 meters from the detached position taken at the time of the dive: position 2296 LAT: 40° 57' 23.282" N ; 073° 37' 28.810 W. The dive buoy was attached to the bow of the wreck, and the difference in the two positions agrees with the distance between the mast and the bow.

The HDAPS utility package was used to convert the survey MTM coordinates to geographic position.

POSITION OF CONTACT: LAT: 40° 57' 23.136" N
LONG: 073° 37' 28.746" W

LORAN CHAIN : 9960 RATES: W - 15350.8 ; X - 26894.9
Y - 43970.6 ; Z - 60008.8

ITEM DESCRIPTION : The divers found the remains of a steel tanker of dimensions about 120 feet by 25 feet. The wreck was resting upright in 60 - 70 feet. A pronounced current scour has been cut into the mud bottom along her starboard side. This scour is about five feet deep.

The highest point of the wreck was found to be the remains of the mast, located midships and slightly forward on the main deck. This mast is about 15 feet above the floor of the sound. The least depth measurement was taken on the highest point on this mast.

Local divers informed the HECK that the pilot house of the wreck had been torn away and now lies off the stern of the wreck. A large pile of tangled metal was found off the port quarter of the wreck, but the pilot house was not located. The local divers verified that the mast was the least depth over the wreck and that the wreck was a Poling Brothers coastal tanker.

V. RECOMMENDATIONS : This wreck is charted on NOS Chart 12367, 17th Ed., Nov. 1/86, as a dangerous submerged wreck; known depth of 38 feet. While vessels having a draft of 30 or more feet do not normally transit this area, surrounding depths would permit such vessels safe passage. This wreck is a popular local sport dive site and numerous large fish and a few lobsters were observed. At least one trawler has recently lost her nets on the wreck.

The HECK recommends that the wreck continue to be charted as a dangerous submerged wreck but that the depth be changed to 39 feet and that the wreck be plotted at the present survey position.

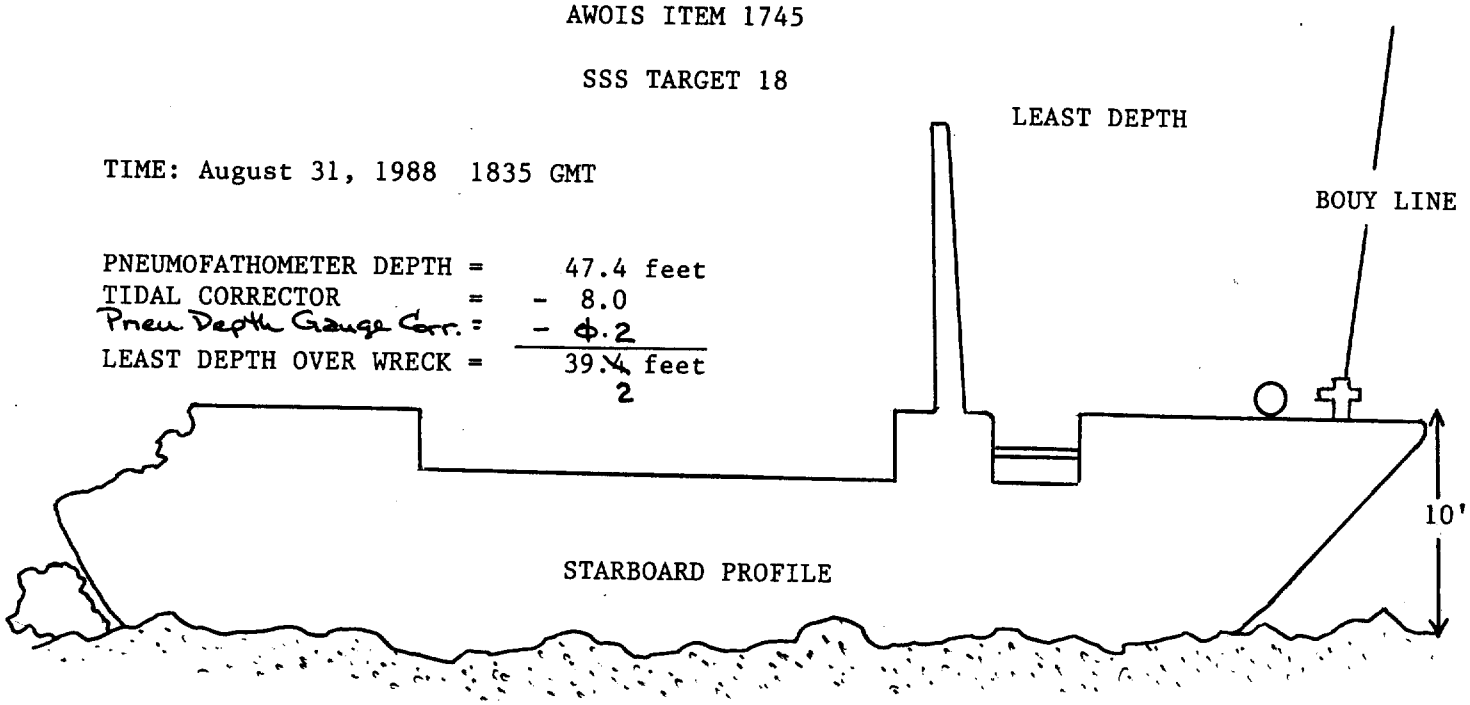
AWOIS item 1745 is considered RESOLVED. Concur.
See sheet 7 of 14

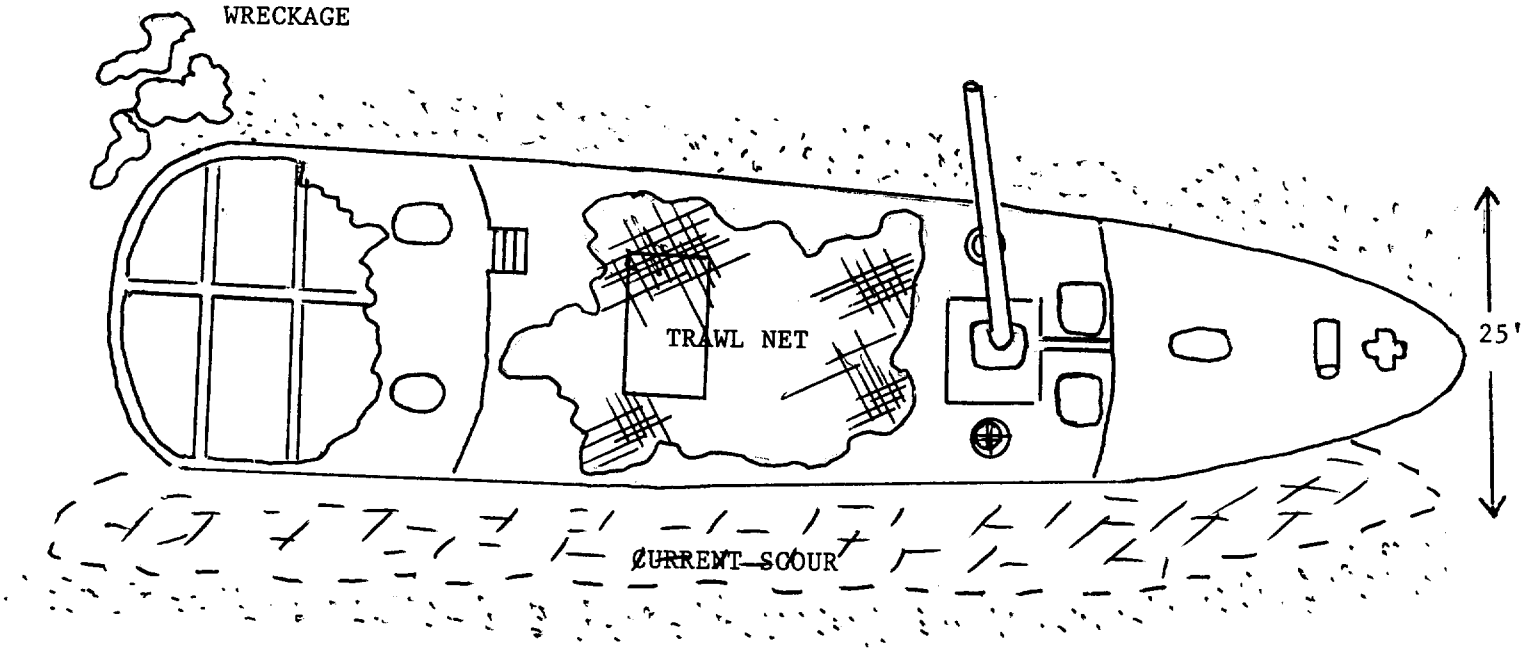
AWOIS ITEM 1745

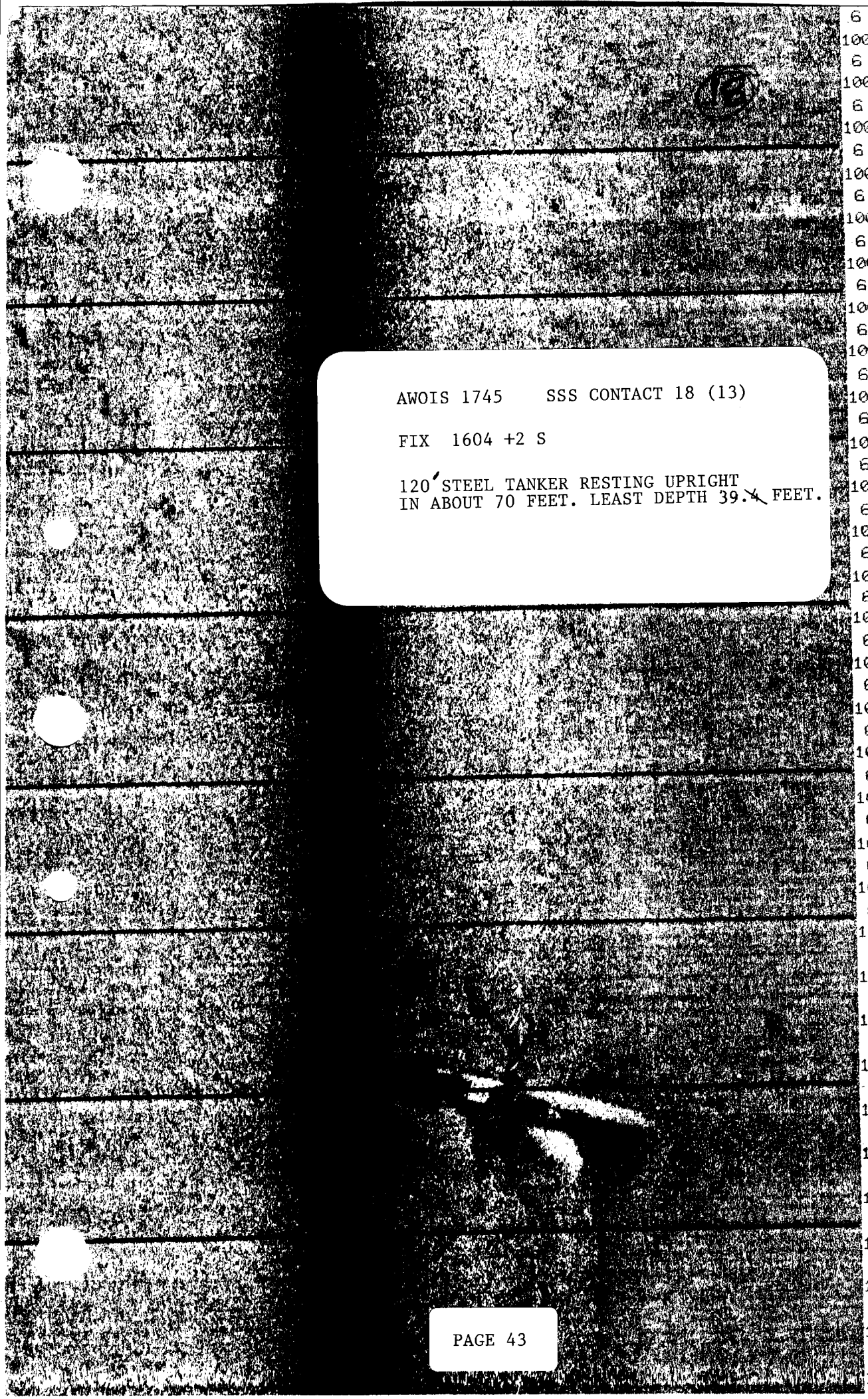
SSS TARGET 18

TIME: August 31, 1988 1835 GMT

PNEUMOFATHOMETER DEPTH = 47.4 feet
TIDAL CORRECTOR = - 8.0
Pneu Depth Gauge Corr. = - 0.2
LEAST DEPTH OVER WRECK = 39.2 feet



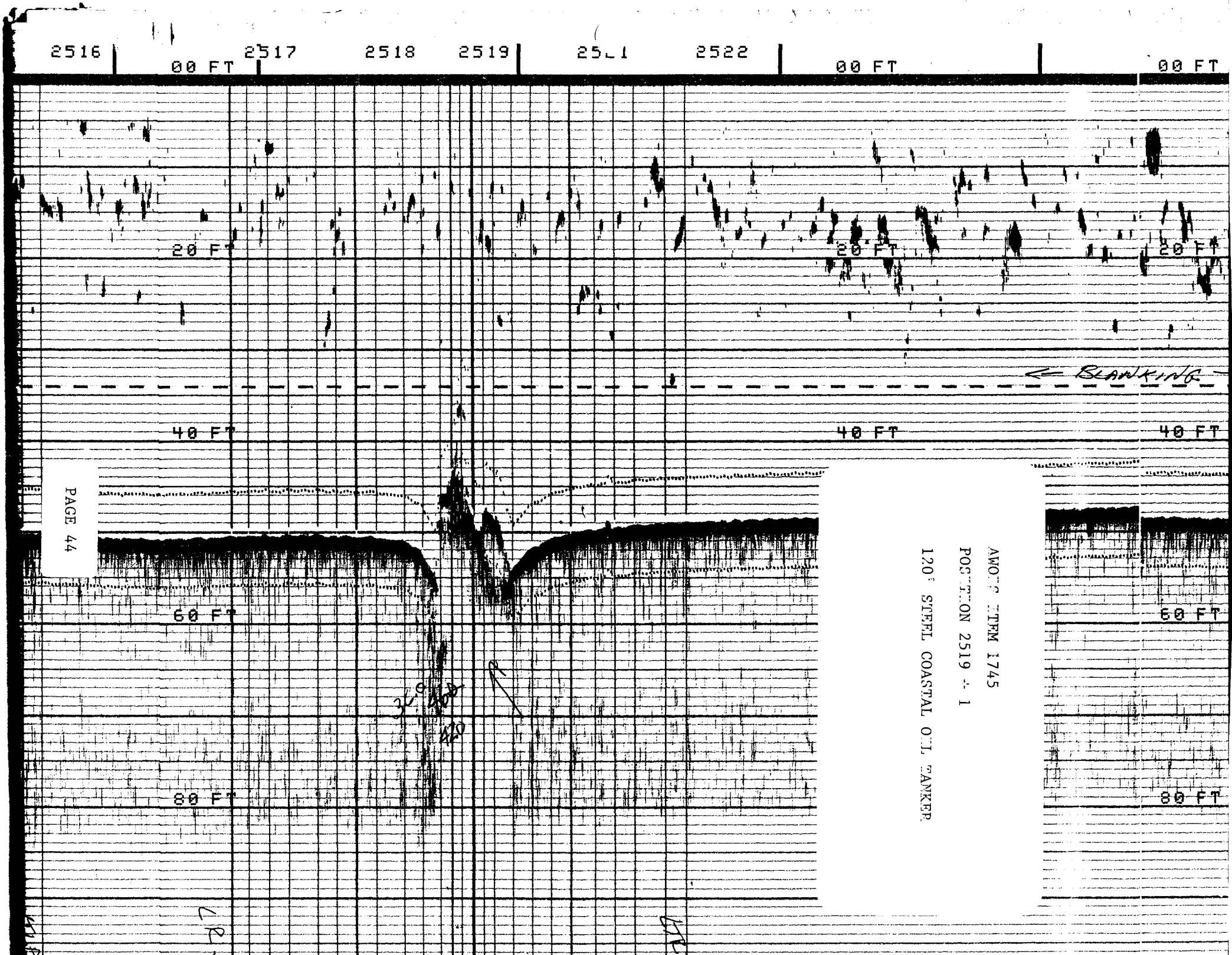




AWOIS 1745 SSS CONTACT 18 (13)

FIX 1604 +2 S

120' STEEL TANKER RESTING UPRIGHT
IN ABOUT 70 FEET. LEAST DEPTH 39.~~4~~ FEET.


2516
2517
2518
2519
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2522
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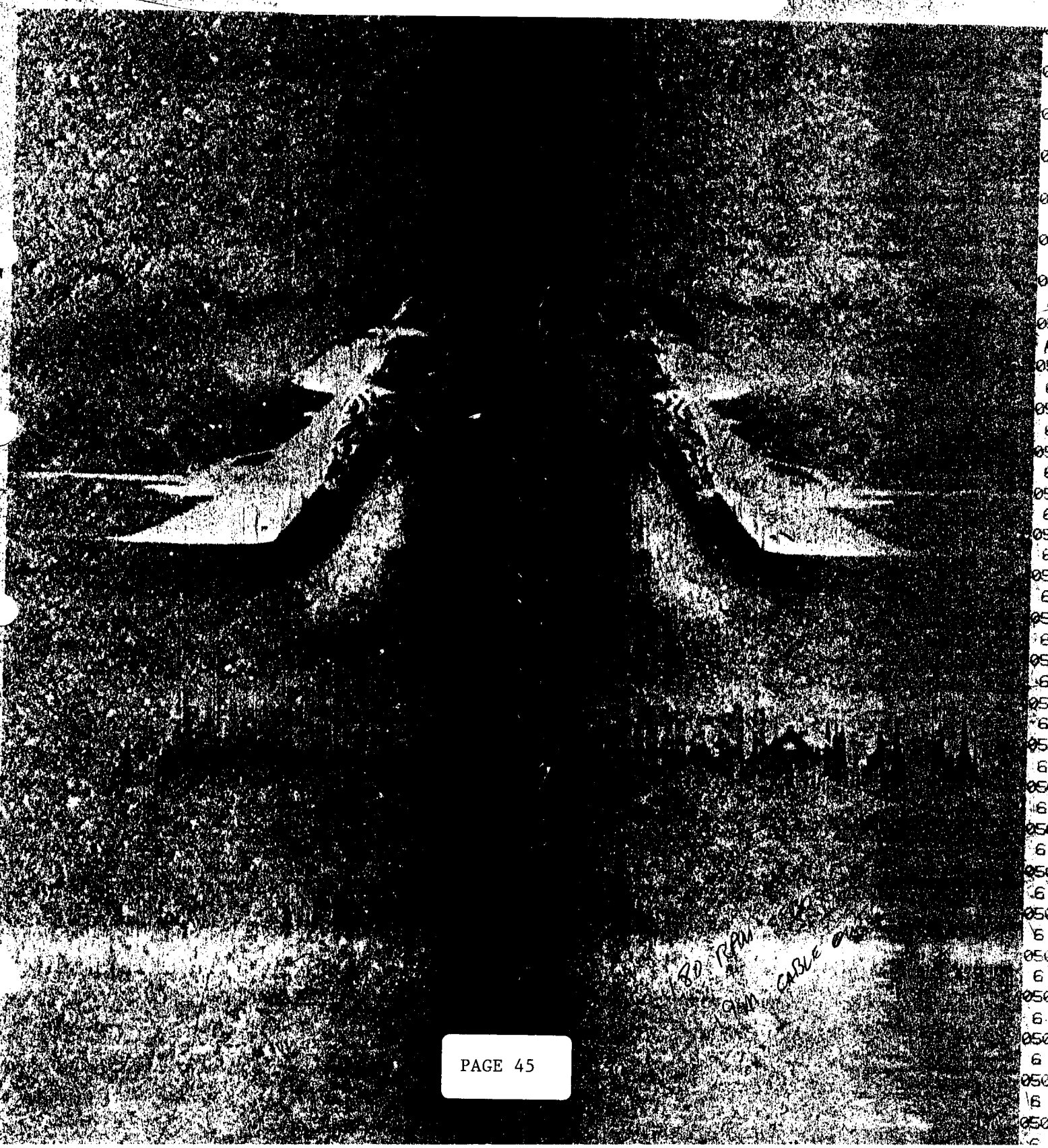
20 FT
20 FT
BLANKING
40 FT
40 FT
40 FT
PAGE 44
60 FT
60 FT
80 FT
80 FT
AWOTS ITEM 1745
POSITION 2519 - 1
120' STEEL COASTAL OIL TANKER

AWOIS ITEM 1745

SSS TARGET 18

RECONNAISSANCE SSS PASS



AWOIS ITEM 1745

POSITION 2296

120 foot steel tanker

NAVISOFT 300 VER 2.31EX-SURVEY: UTILITIES: MTM -> LAT/LON 9

17:54:48

Easting.....: 103535.7_
Northing.....: 22928.8

Latitude.....: 040:57:23.282
Longtitude.....: 073:37:28.810

User 1 Caps Running

HELP Dump Alpha Dump Graphics

Day	Time	Tide Corr. Units FEET
244	18:00	-7.4
244	18:06	-7.5
244	18:12	-7.7
244	18:18	-7.8
244	18:24	-7.9
244	18:30	-8.0
2[illegible]	18:36	-8.0 ←
2[illegible]	18:42	-8.1
244	18:48	-8.1
244	18:54	-8.2
244	19:00	-8.2
244	19:06	-8.2
244	19:12	-8.2
244	19:18	-8.2
244	19:24	-8.2
244	19:30	-8.1
244	19:36	-8.1
244	19:42	-8.0
244	19:48	-8.0
244	19:54	-7.9
244	20:00	-7.9
244	20:06	-7.8
244	20:12	-7.7
[illegible]	20:18	

K 7. INVESTIGATION REPORT FOR AWOIS ITEM 4407

AWOIS HISTORY : H5142/31WD -- PROJ NO.64; Wreckage 37 feet (charted as cleared 37 feet). Scaled in LAT 40° 56' 00.5" ; 73° 34' 21.2" (Entered 3/86) (NAD 27)

SURVEY REQUIREMENTS : Full, verify or disprove through 200% side scan sonar coverage, 75 meter radius. Least depth and position required if found.

METHOD OF INVESTIGATION : The specified search radius was investigated by Side Scan Sonar; the 100 meter range scale and the 100khz frequency settings were used. Two hundred percent coverage was achieved by running two sets of two lines each at orthogonal angles.

RESULTS OF INVESTIGATION : Four Side Scan Sonar lines were run in the vicinity of the reported position of the AWOIS item and are shown on sheet HE-10-2-88. No significant targets were found.

No diver investigations were conducted on this AWOIS item.

RECOMMENDATIONS : This item is charted on NOS Chart 12367, Greenwich Point to New Rochelle, 17th Edition, Nov. 1, 1986, as a wreck cleared by wire drag to 37 feet.

Nothing of charting significance was found during this survey. The HECK recommends that the wreck be removed from the chart.

AWOIS item 4407 is considered DISPROVED .- See also section 6.b.3) of the Evaluation Report. See sheet 8 of 14.

K 8. INVESTIGATION REPORT FOR AWOIS ITEM 4411

AWOIS HISTORY : H5142/31WD -- Proj no. 64; Wreckage 24 ft, scaled in LAT 40° 58' 33.0", LONG 73° 38' 07.0". (NAD 27)

H5402A/33 -- Proj. no. 134; not investigated, carried forward in general depths of 29-32 feet. (entered 3/86)

SURVEY REQUIREMENTS : Full, verify or disprove through 200% side scan sonar coverage, 75 meter radius, least depth and position required if found.

METHOD OF INVESTIGATION : The specified search radius was investigated by side scan sonar; The 50 meter range scale and 100 khz frequency settings were used. Two hundred percent coverage was achieved by running two sets of three lines at orthogonal angles.

RESULTS OF INVESTIGATION : Six mainscheme SSS lines were run in the immediate vicinity of the reported position of the AWOIS item. These SSS lines are shown on the field and smooth plots for sheet HE-10-4-88. No contacts resembling wreckage were found.

Several prominent boulders were visible on the SSS imagery, but lie outside of the search radius . The most significant of these contacts is listed as contact 29 in the target abstract. These contacts were not investigated due to the surrounding shallow water. This area is marked by red bouy N "2" on NOS Chart 12367, Greenwich Point to New Rochelle, 17th Edition, Nov. 1, 1986.

RECOMMENDATIONS : No significant contacts were found within the specified search radius. This wreck is charted as a wreck with known depth of 24 feet on NOS Chart 12367. HECK personnel dicussed this wreck with local divers (Mr. Richard Taracka, Greenwich Marine Police) who stated that a wreck lies inshore of the red N "2" bouy. The HECK did not conduct survey operations inshore of this bouy.

A second local diver, Mr. Lada Simek, stated that he had been unable to locate the charted wreck.

HECK recommends that the charted wreck be removed from the chart.

AWOIS item 4411 is considered DISPROVED. - See also section 6.b.4) of the Evaluation Report.

See sheet 9 of 14.

chart 12367

K 9. INVESTIGATION REPORT FOR AWOIS ITEM 6490 - See also section 7.a. of the Evaluation Report

AWOIS HISTORY : LNM5/82 -- 3rd CGD; 2/2/82; wreckage of fishing vessel marked by buoy in PA LAT: 40° 56' 12"; LONG: 073° 37' 06". LNM8/82 -- buoy discontinued. (NAD 27)

SURVEY REQUIREMENTS : Full, Verify or disprove through 200% side scan sonar coverage, 2000 meter radius, least depth and position required if found.

METHOD OF INVESTIGATION : The specified search radius was investigated by Side Scan Sonar; the 100 meter range scale and 100 khz frequency settings were used. Two hundred percent coverage was achieved by running two sets of SSS lines at orthogonal angles. A total of 51 mainscheme SSS lines were run to cover the search radius.

RESULTS OF INVESTIGATION : SSS lines are shown on both the field survey sheets and the smooth plots for HE-10-2-88. Several reconnaissance SSS lines were run over various targets for better definition of the target before diving. These reconnaissance lines are not plotted on the smooth survey sheets for the survey.

Diver investigations were performed on 7 significant targets within the search radius. Six contacts were found to be of importance for charting. The following table summarizes the contacts found within the search radius for this item:

TARGET Posn.#	POSITION	DEPTH	RECOMMENDATION	Diver
4 2573	40° 56' 21.376" 073° 38' 31.683"	~~57~~ 56	sunken wreck non-dangerous	AWOIS #7531 ✓
10 24ϕ	40° 55' 57.084" 073° 36' 57.801"	~~40~~ 41	sunken wreck ~~non~~-dangerous	AWOIS #7532 ✓
11 24ϕϕ	40° 56' 07.065" 073° 36' 49.642"	~~47~~ 48	Obstruction (wreckage) non-dangerous	AWOIS #7533 ✓
15 23ϕϕ	40° 56' 58.752" 073° 37' 40.288"	50	sunken wreck non-dangerous	7534 ✓ ✓
17 24ϕ9	40° 57' 20.922" 073° 36' 55.830"	~~50~~ 48	sunken wreck ~~non~~-dangerous	AWOIS ✓ item 6490 ✓
21 No D.P.	40° 56' 18.018" 073° 37' 01.710"	see also section 7.a.1) of the Evaluation Report	rocks / not to be charted	
27 24ϕ7	40° 56' 50.057" 073° 36' 10.687"	49	sunken wreck non-dangerous	7535 ✓ ✓

K 9.1 CONTACT INVESTIGATION REPORT TARGET NUMBER 4

DETERMINATION OF DIVE SITE : The contact was identified by SSS survey and was labeled as contact number 4 in the target abstract. The HECK was maneuvered over the SSS position of the target. When evidence of the wreck was visible on the echosounder, a dive buoy was deployed.

SEARCH PROCEDURE : Divers LT(jg) Beaver and LT Tuell descended the buoy line and attached a tagline to the buoy weight. A circle search was performed and the wreck of a small sport boat was found about 5 meters from where the buoy weight had fallen. The weight was moved onto the wreck. The divers swam the length of the wreck and located the highest point. The dive buoy was then moved to the high point.

LEAST DEPTH DATA : The pneumofathometer airline was lowered down the buoy line to the divers. The orifice of the line was held over the least depth. ST Morris and CB Mickle manned the pneumofathometer in the ship's SISU launch.

The dive was completed on **September 20, 1988 (DOY 264)**. Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004 N): Position Number 2573

1) TIME (UTC)	: 1705	RAW LEAST DEPTH READING (FT)	:	59.0
2)	1705			58.5
3)	1705			59.0
		AVG LEAST DEPTH READING (FT)	:	58.8

MEASURED DEPTH : 58.8 FEET
TIDAL CORRECTOR : - 1.56
Pneu. Depth Gauge Corr: - 0.5
LEAST DEPTH : ~~57.3~~ 56.7 FEET

GENERAL STATEMENT OF POSITION QUALITY : The HECK was maneuvered into close proximity to the dive buoy. When evidence of the wreck was visible on the fathometer, FIX 2573 was taken over the wreck. A position was computed using three MiniRanger LOP's with a maximum residual of 0.5 meters and a 95% confidence error circle radius of 3.8 meters.

The HDAPS utility program was used to transform MTM survey coordinates to geographic position.

POSITION OF CONTACT: LAT: 40° 56' 21.376" N
LONG: 073° 38' 31.683" W

LORAN CHAIN : 9960 RATES: W - 15358.6 ; X - 26900.6
Y - 43962.6 ; Z - 60003.6

ITEM DESCRIPTION : The divers found the remains of a small wood and fiberglass sport boat resting upright on a muddy bottom. The wreck appears to be relatively recent and is in good condition. The least depth measurement was taken over the steering stand.

RECOMMENDATIONS : This wreck is not presently charted. It rises 4 feet off the bottom in depths of about 60 feet.

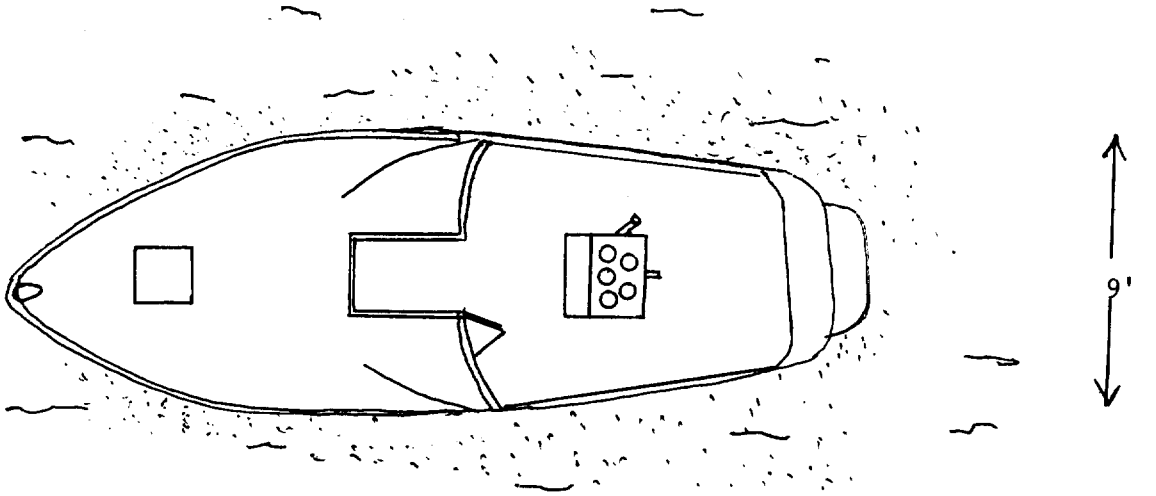
HECK recommends that this wreck be charted as a sunken wreck, not dangerous to navigation, with a known depth of ~~57~~ 56 feet.

See sheet 10 of 14.

AWOIS ITEM 6490

SSS CONTACT 4

TIME: SEPTEMBER 20, 1988 1305 LMT (1705 GMT)

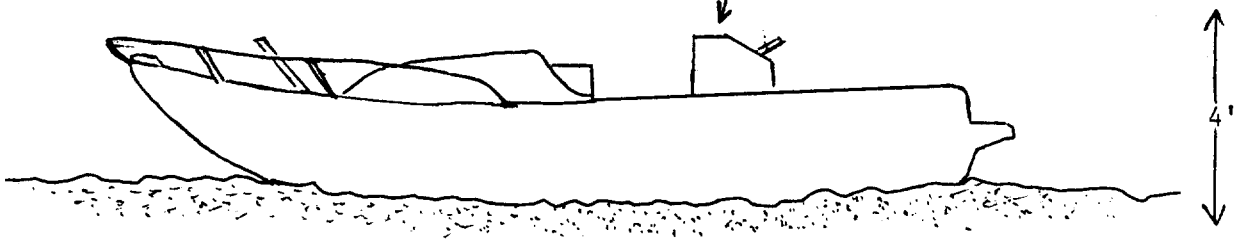


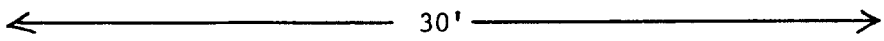
PNEUMOFATHOMETER DEPTH = 58.8 FEET

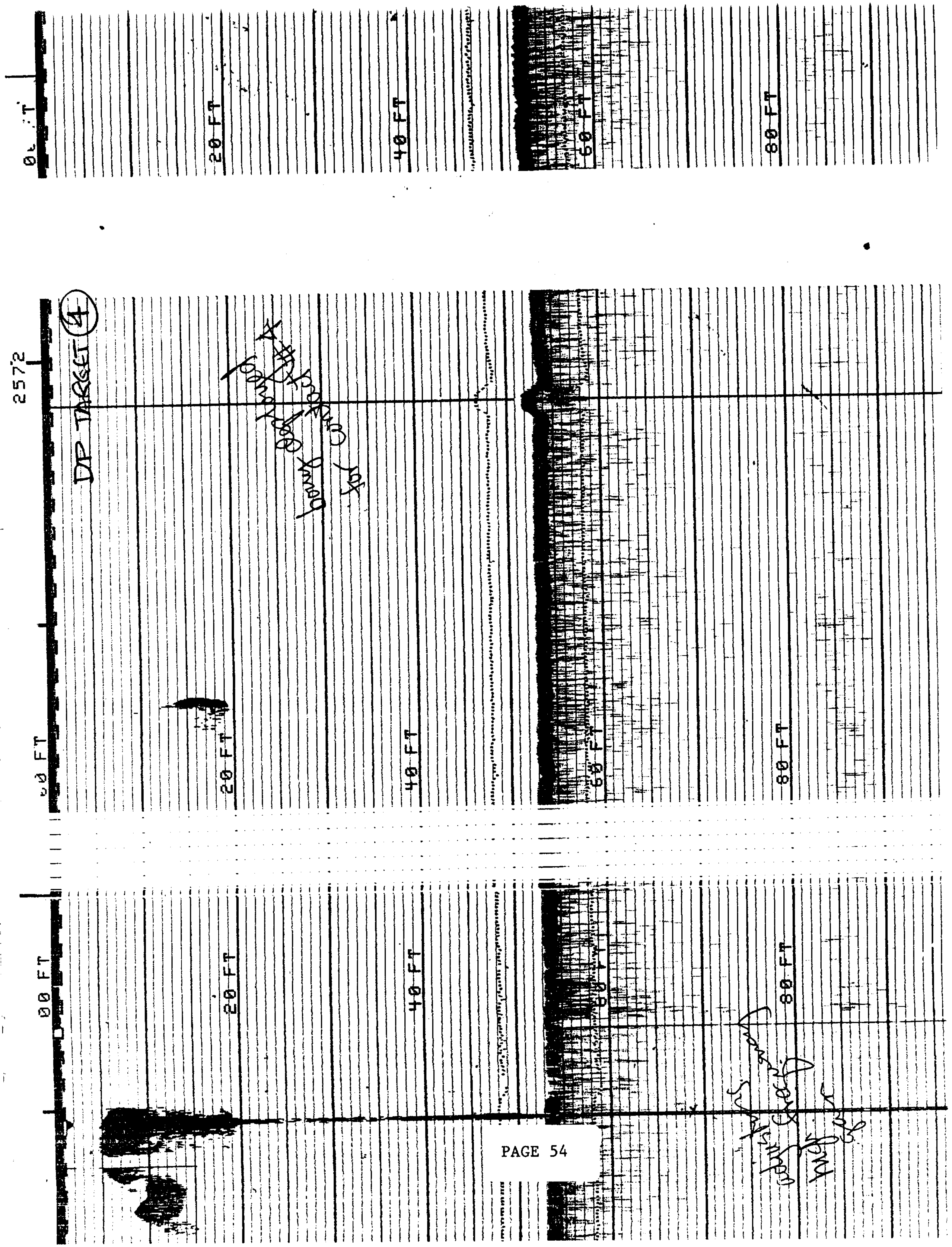
TIDAL CORRECTOR = - 1.~~5~~ 6 FEET

Pneu. Depth Gauge Corr. = - ~~0~~.5 FEET

LEAST DEPTH OVER WRECK = ~~57.3~~ 56.7 FEET






DP TARGET 4
2572
20 FT
40 FT
60 FT
80 FT

050M

6

050M 19:25:29 2479

6

050M

6

050M

6

050M

6

050M 19:25:15

6

050M

6

050M

6

050M

6

050M 19:25:00

6

050M

6

050M

6

050M

6

050M 19:24:47

6

050M

6

050M

6

050M

6

050M 19:24:32

6

050M

6

050M

6

050M

6

050M 19:24:19

Same as TAPE (4)

Tape (3)

NAVISOFT 300 VER 2.31EX-SURVEY: UTILITIES: MTM -> LAT/LON 9

17:48:17

Easting.....: 102065.9_
Northing.....: 21018.6

Latitude.....: 040:56:21.376
Longtitude.....: 073:38:31.683

User 1 Caps Running

HELP Dump Alpha Dump Graphics

Day	Time	Tide Corr. Units FEET
264	16:00	-1.5
264	16:06	-1.5
264	16:12	-1.4
264	16:18	-1.4
264	16:24	-1.4
264	16:30	-1.4
264	16:36	-1.4
264	16:42	-1.4
264	16:48	-1.4
264	16:54	-1.5
264	17:00	-1.5
264	17:06	-1.5
264	17:12	-1.6
264	17:18	-1.6
264	17:24	-1.7
264	17:30	-1.8
264	17:36	-1.9
264	17:42	-1.9
264	17:48	-2.0
264	17:54	-2.1
264	18:00	-2.2
264	18:06	-2.3
264	18:12	-2.4
264	18:18	-2.6
264	18:24	-2.7
264	18:30	-2.8
264	18:36	-2.9
264	18:42	-3.1
264	18:48	-3.2
264	18:54	-3.3
264	19:00	-3.5
264	19:06	-3.6

K 9.2 CONTACT INVESTIGATION REPORT CONTACT NUMBER 10, 23

DETERMINATION OF DIVE SITE : The contact was originally identified by Side Scan Sonar and is listed as targets 10 and 23 in the target abstract for the survey. The HECK was maneuvered into the vicinity of the contact and when evidence of the target was visible on the DSF 6000 fathometer, a dive buoy was deployed.

SEARCH PROCEDURE : Divers LT(jg) Beaver and LT Tuell descended the buoy line. A tagline was attached to the weight and a 15 meter circle search was performed to find the first of two contacts. The divers then swam toward the northeast to find the second contact.

METHOD OF DETERMINATION : The pneumofathometer airline was lowered down the buoy line. ST Morris and CB Mickle manned the pneumofathometer in the Sisu launch. Depths were taken on two large pieces of the same wreck. Only the shoaler of the two depths is submitted herein as the least depth for the contact:

Dives were conducted on September 6 and 7, 1988. The least depth was measured on September 7, 1988 (DOY 251). Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004).
Position Number 2410

1) TIME (UTC) : 1600	RAW LEAST DEPTH READING	(FT) :	46.2
2) : 1600		:	46.0
3) : 1600		:	46.2
	AVERAGE LEAST DEPTH READING	(FT) :	46.1

AVERAGE LEAST DEPTH (FT) : 46.1
TIDE CORRECTOR (FT) : ~~-5.8~~ 4.6
Pneu. Depth Gauge Corr. : -0.2

ACTUAL LEAST DEPTH (FT) : ~~40.3~~ 41.3

GENERAL STATEMENT OF POSITION QUALITY : The HECK was maneuvered into close proximity to the dive buoy. The buoy had been placed on the highest point by the divers. When evidence of the wreck was seen on the fathometer, FIX 2410 was taken. The position was computed using three MiniRanger LOP's with a maximum residual of 1.1 meters and a 95% confidence error circle radius of 3.2 meters.

The HDAPS utility package was used to convert MTM survey coordinates to geographic position.

POSITION OF CONTACT : LAT : 040° 55' 57.084 N
LONG : 073° 36' 57.801 W

LORAN CHAIN : 9960 RATES : W-15349.5 X-26886.5
Y-43956.4 Z-60003.4

ITEM DESCRIPTION : The divers found two large pieces of metal wreckage that are apparently part of the same wreck. Both pieces extend approximately ten feet off the bottom. A hatch was found on the first contact which indicates that the wreckage may be that of a vessel. The structural members were made of steel with a plating of corrugated steel on one section. The wreckage is severely deteriorated.

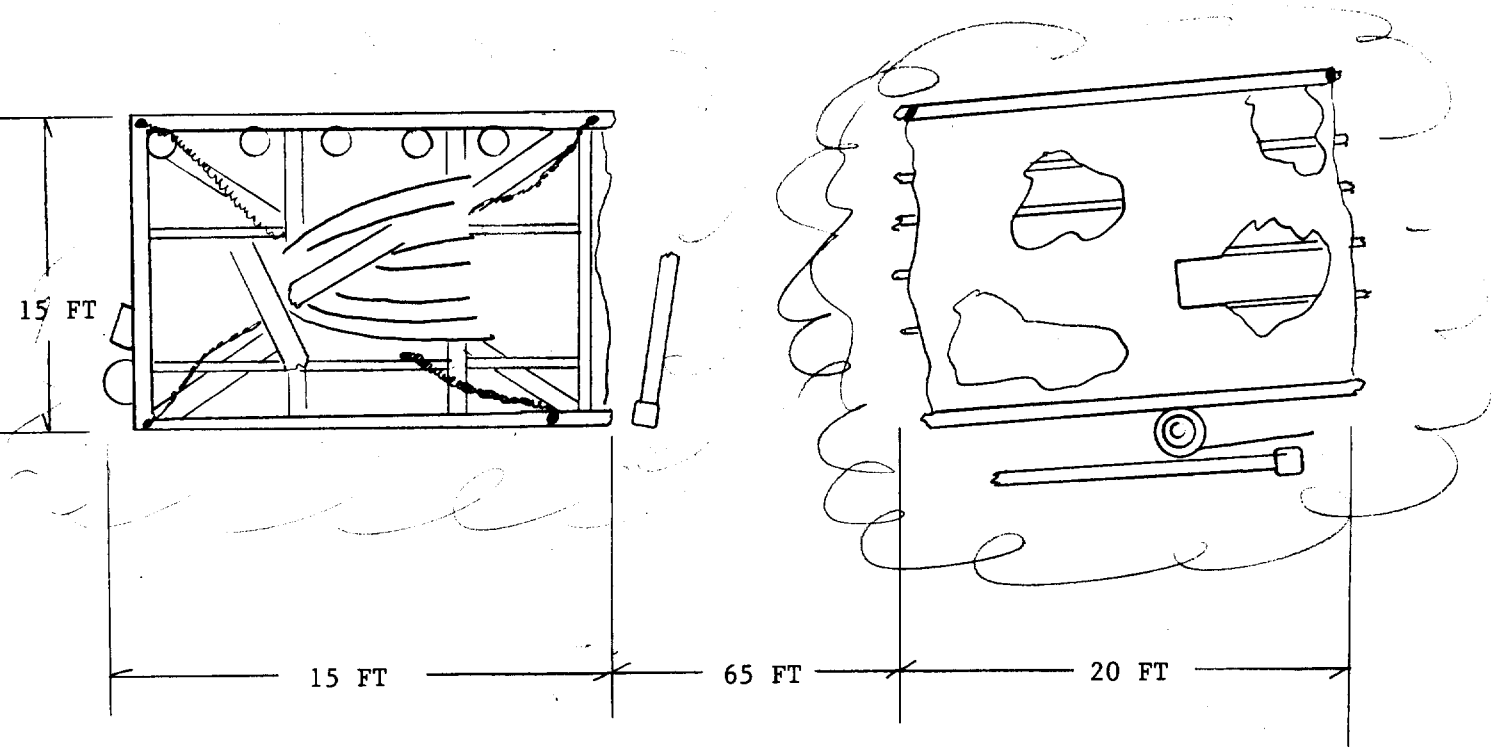
The two pieces of the wreck are approximately equal in size and shoal to nearly the same least depth. The northern of the two pieces is slightly shoaler. There are several structures attached and lying about the wreckage that could not be identified. Several lifting type cables were attached to the northern wreckage.

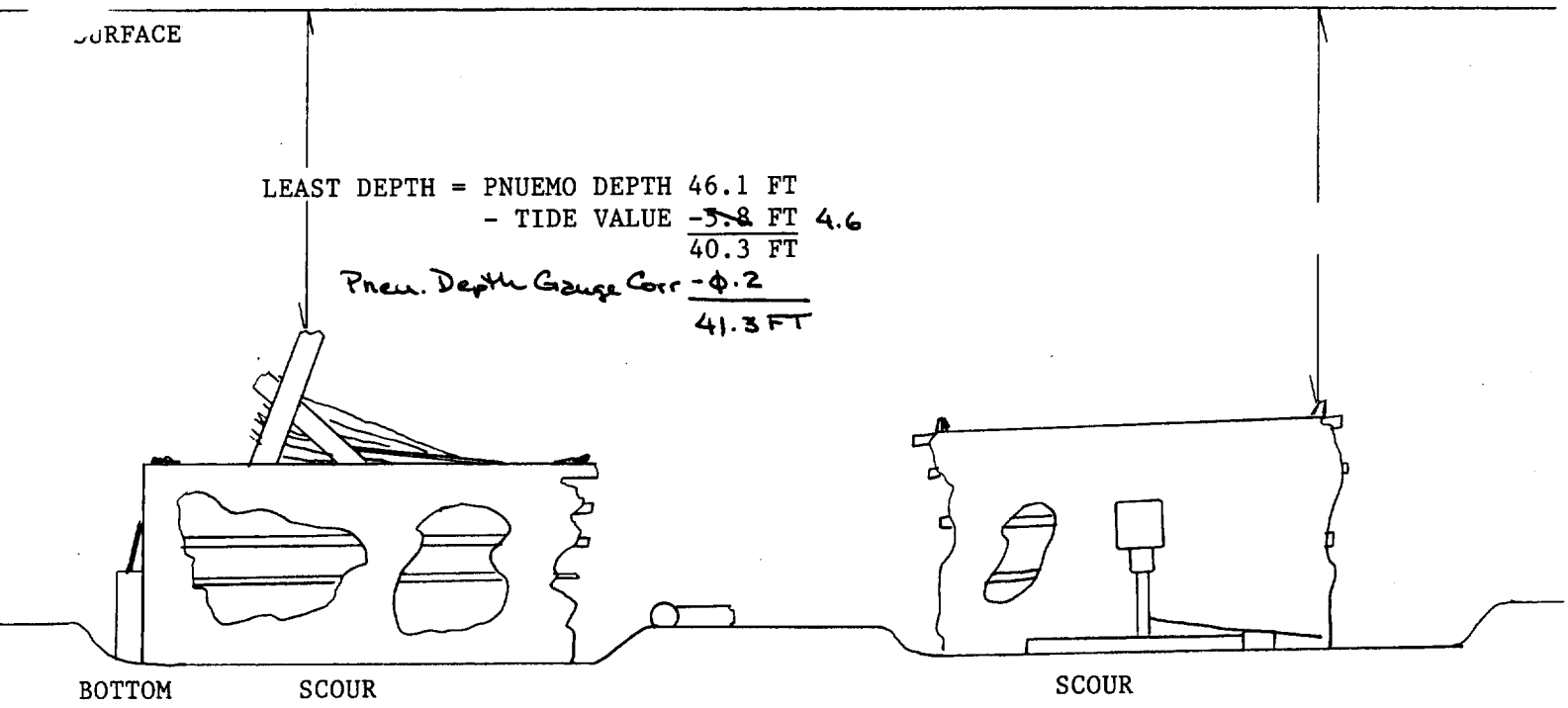
RECOMMENDATIONS : This wreck is not presently charted. The wreck shoals to 40 feet in surrounding depths of about 52 feet. The HECK recommends that the wreck be charted as a submerged wreck, ~~not~~ dangerous to navigation, with a known depth of ~~40~~ 41 feet.

See sheet 11 of 14.

AWOIS ITEM #6490
CONTACTS 10, 23
CSTN NUMBER 010

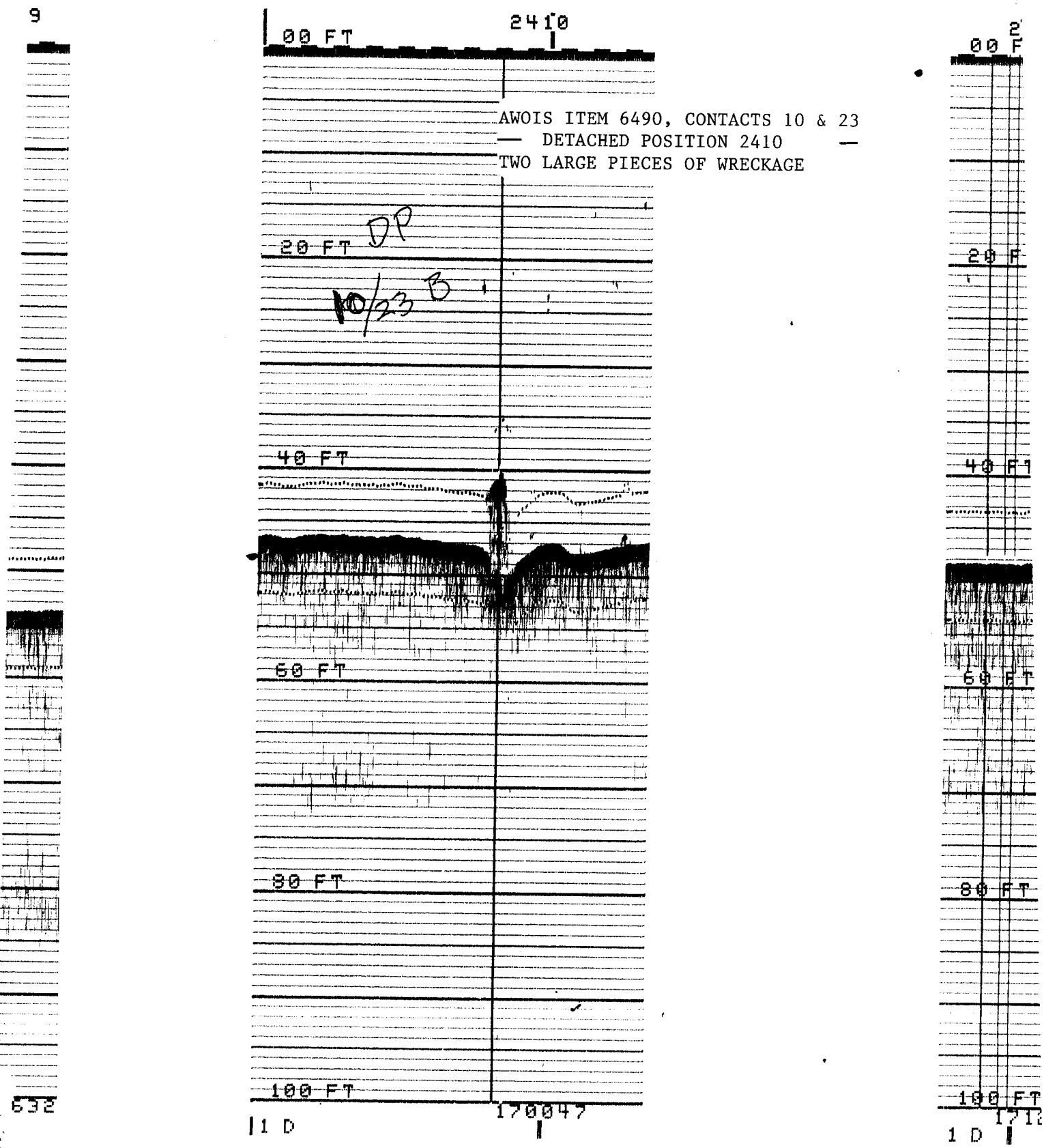
DIVERS : LT TUELL, LT(jg) BEAVER
METHOD OF SEARCH : CIRCLE
LEAST DEPTH DETERMINATION : PNUEMO






AWOIS ITEM 6490, CONTACTS 10 & 23
DETACHED POSITION 2410
TWO LARGE PIECES OF WRECKAGE
5
100M
5
100M
17:24:39
5
100M
5
100M
5
17:24:25 1126
100M
5
100M
5
100M
5
100M
17:24:11
5
100M
5
100M
5
100M
5
100M
17:23:56
5
100M
5
100M
5
100M
5
17:23:43
100M
5
100M
5
100M
5
17:23:29
100M
5
100M
5
100M
5
100M
17:23:15
5
100M
5
100M
5
100M
5
100M
17:23:00 1125
5
100M
5

AWOIS ITEM 6490, CONTACTS 10 & 23
— DETACHED POSITION 2410 —
TWO LARGE PIECES OF WRECKAGE



NAVISOFT 300 VER 2.31EX-SURVEY: UTILITIES: MTM -> LAT/LON 9 Oct 18:34

Easting.....: 104262.4
Northing.....: 20270.2

Latitude.....: 040:55:57.084
Longtitude.....: 073:36:57.801

User 1 Caps Running

HELP Dump Alpha Dump Graphics

Day	Time	Tide	Corr.	Units	FEET
251	15:00	-6.8			
251	15:06	-6.7			
251	15:12	-6.7			
251	15:18	-6.6			
251	15:24	-6.5			
251	15:30	-6.4			
251	15:36	-6.3			
251	15:42	-6.2			
251	15:48	-6.1			
251	15:54	-5.9			
251	16:00	-5.8			
251	16:06	-5.7			
251	16:12	-5.5			
251	16:18	-5.4			
251	16:24	-5.3			
251	16:30	-5.1			
251	16:36	-5.0			
251	16:42	-4.8			
251	16:48	-4.7			
251	16:54	-4.5			
251	17:00	-4.3			
251	17:06	-4.2			
251	17:12	-4.0			
	17:18	-3.8			
	17:24	-3.7			
251	17:30	-3.5			
251	17:36	-3.4			
251	17:42	-3.2			
251	17:48	-3.0			
251	17:54	-2.9			
251	18:00	-2.7			
251	18:06	-2.6			

K 9.3 CONTACT INVESTIGATION REPORT TARGET 11, 26

DETERMINATION OF DIVE SITE : The contact was identified by SSS survey and was labeled as contact numbers 11 and 26 in the target abstract. The HECK was maneuvered over the SSS position of the target. When evidence of the wreck was visible on the echosounder, a dive buoy was deployed.

SEARCH PROCEDURE : Divers LT(jg) Beaver and LT Tuell descended the buoy line and found that the buoy weight had fallen into a large pile of metal debris. A tagline was attached to the weight and a circle search was performed around the debris to locate the highest point. The buoy was then moved to the highest point.

LEAST DEPTH DATA : The pneumofathometer airline was lowered down the buoy line. The orifice of the line was held over the high point of the wreckage. ST Morris and AB Jones manned the pneumofathometer in the ship's SISU launch.

The dive was completed on September 7, 1988 (DOY 251). Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004 N): Position Number 2400

1) TIME (UTC) :	1819	RAW LEAST DEPTH READING (FT)	:	50.0
2)	1819			50.2
3)	1819			50.2
		AVG LEAST DEPTH READING (FT)	:	50.1

MEASURED DEPTH : 50.1 FEET
TIDAL CORRECTOR : - ~~2.3~~ 1.6
Pneu. Depth Gauge Corr: - 0.3
LEAST DEPTH : ~~47.8~~ FEET
48.2

GENERAL STATEMENT OF POSITION QUALITY : The HECK was maneuvered into close proximity to the dive buoy. When the wreckage was visible on the fathometer, FIX 2400 was taken over the wreckage. The position was determined using the HDAPS system and three MiniRanger LOP's. The maximum residual on the computed position was 0.3 meters and the 95% confidence error circle radius was 4.2 meters.

POSITION OF CONTACT: LAT: 40° 56' 07.065" N
LONG: 073° 36' 49.642" W

LORAN CHAIN : 9960 RATES: W - 15348.5 ; X - 26885.9
Y - 43957.8 ; Z - 60004.4

The HDAPS utility program was used to transform MTM survey coordinates to geographic position.

ITEM DESCRIPTION : The divers found what appeared to be various large pieces of scrap metal which had been dumped into the sound. The two largest pieces were rectangular tanks of undetermined use ; the least depth was found to be at one corner of one of these tanks. This depth is deeper than the surrounding bottom depths.

RECOMMENDATIONS : Because this wreckage is deeper than the surrounding water depths, the wreckage is not a danger to navigation. However, the wreckage would be of interest to local fishermen and sport divers.

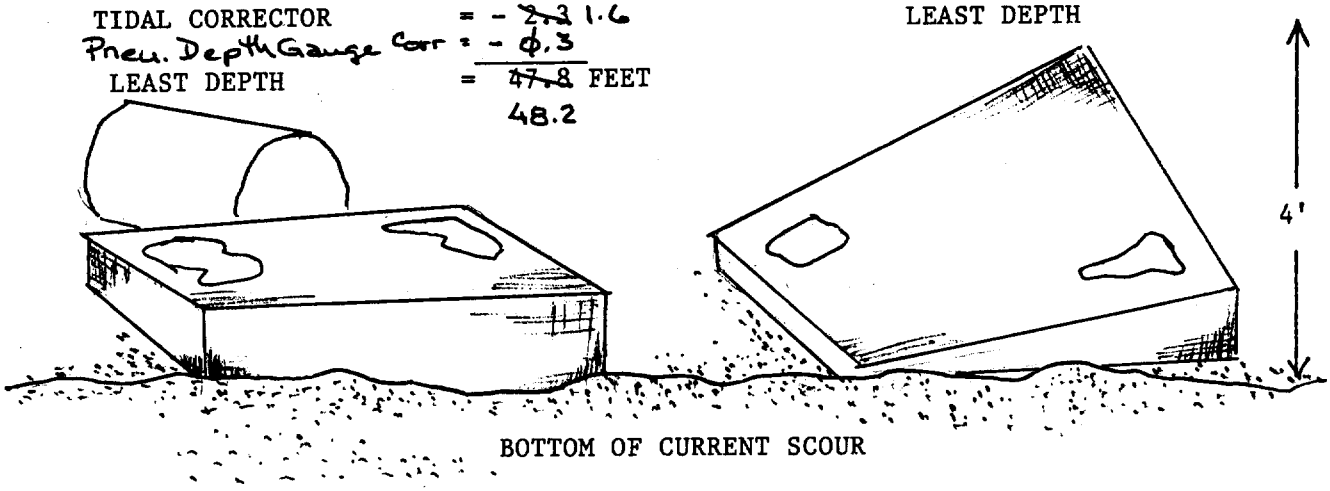
HECK recommends that the contact be charted as wreckage with a known depth of ~~47~~ 48 feet. See sheet 11 of 14.

AWOIS ITEM 6490

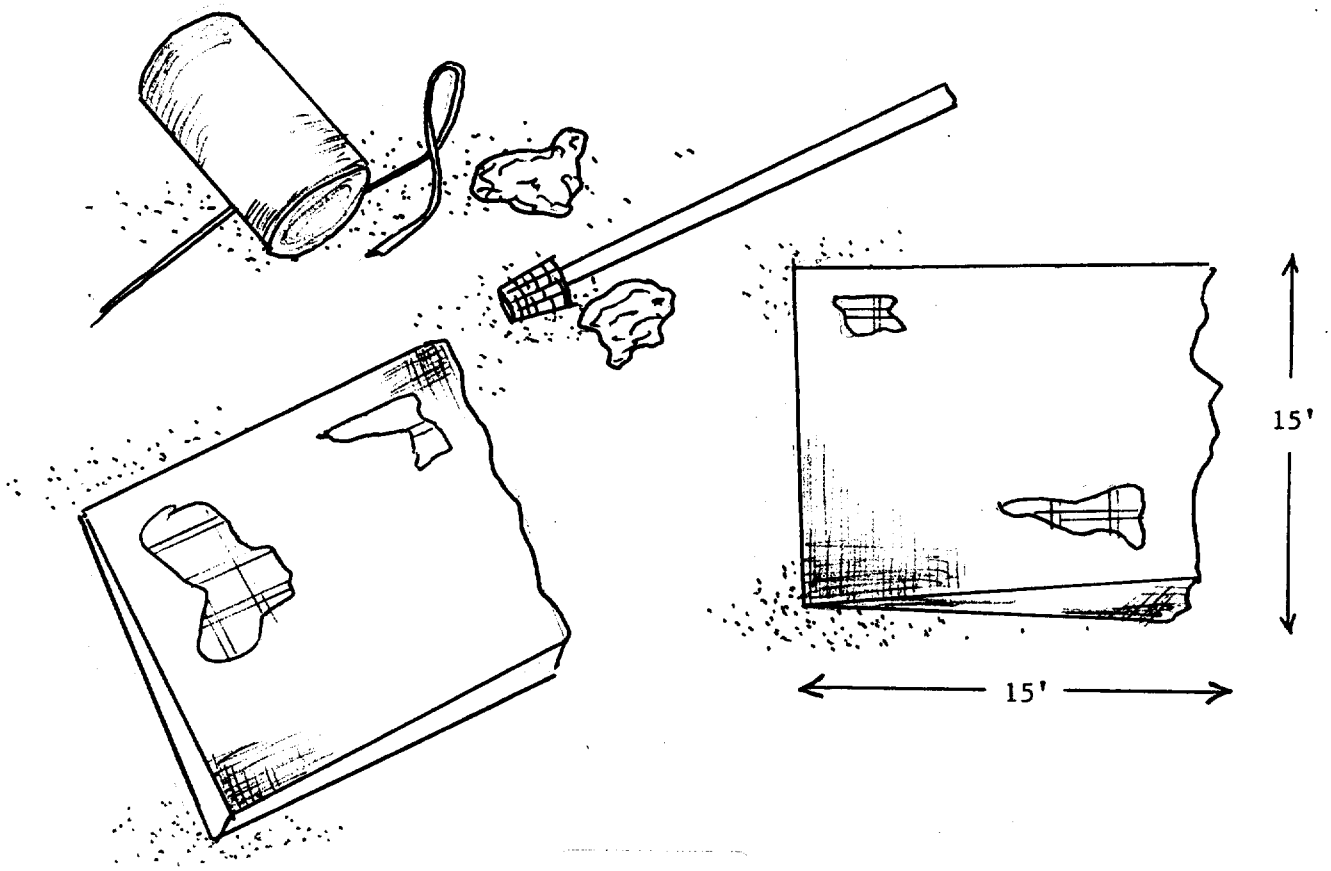
SSS TARGET 11

TIME: September 7, 1988 1819 UTC

PNEUMOFATHOMETER DEPTH = 50.1 FEET
TIDAL CORRECTOR = - ~~2.3~~ 1.6
Pneu. Depth Gauge Corr = - 0.3
LEAST DEPTH = ~~47.8~~ FEET
48.2



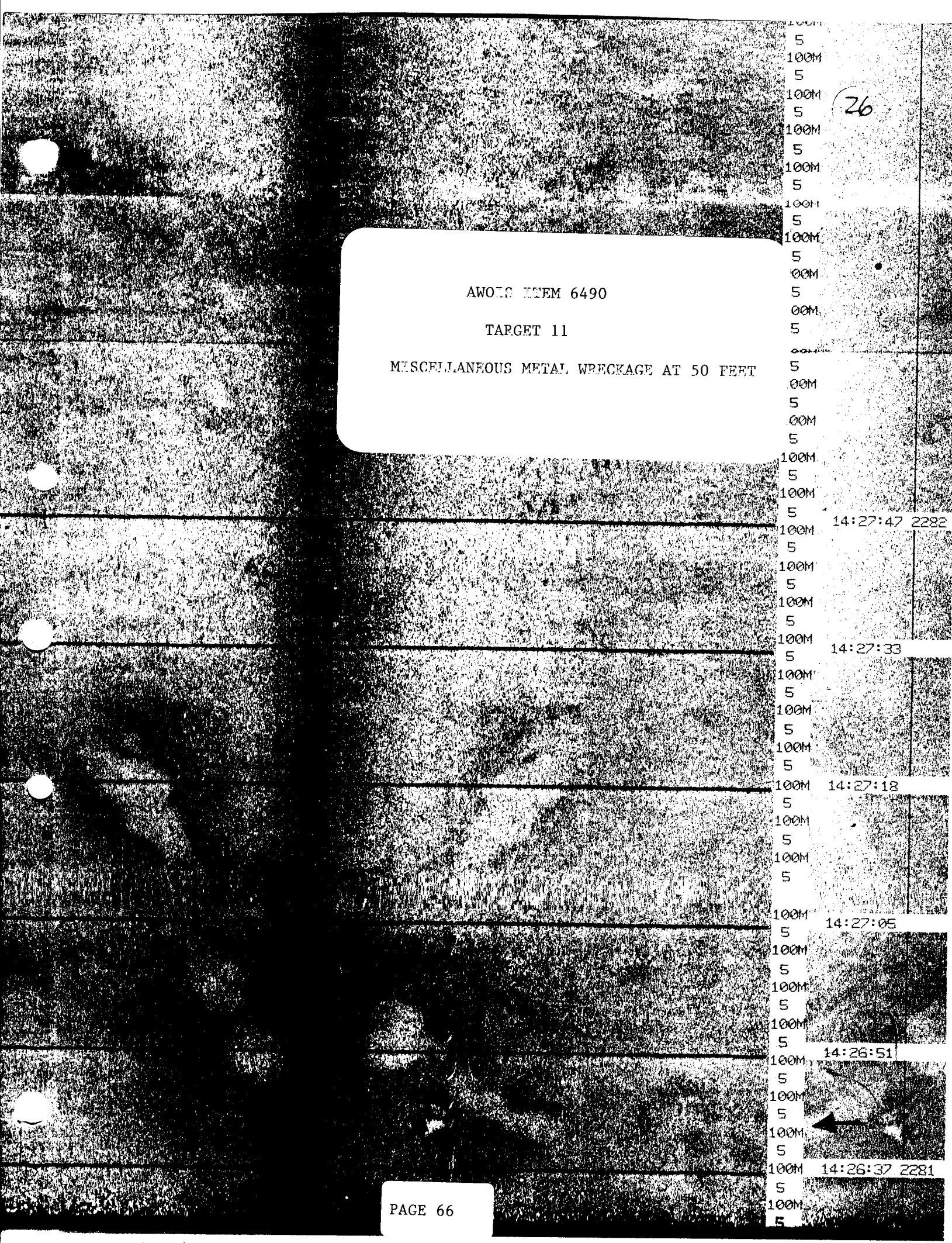
THIS WRECKAGE IS LOCATED WITHIN A CURRENT SCOUR. THE HIGHEST POINT OF THE WRECKAGE IS DEEPER THAN SURROUNDING DEPTHS OUTSIDE THE SCOUR.



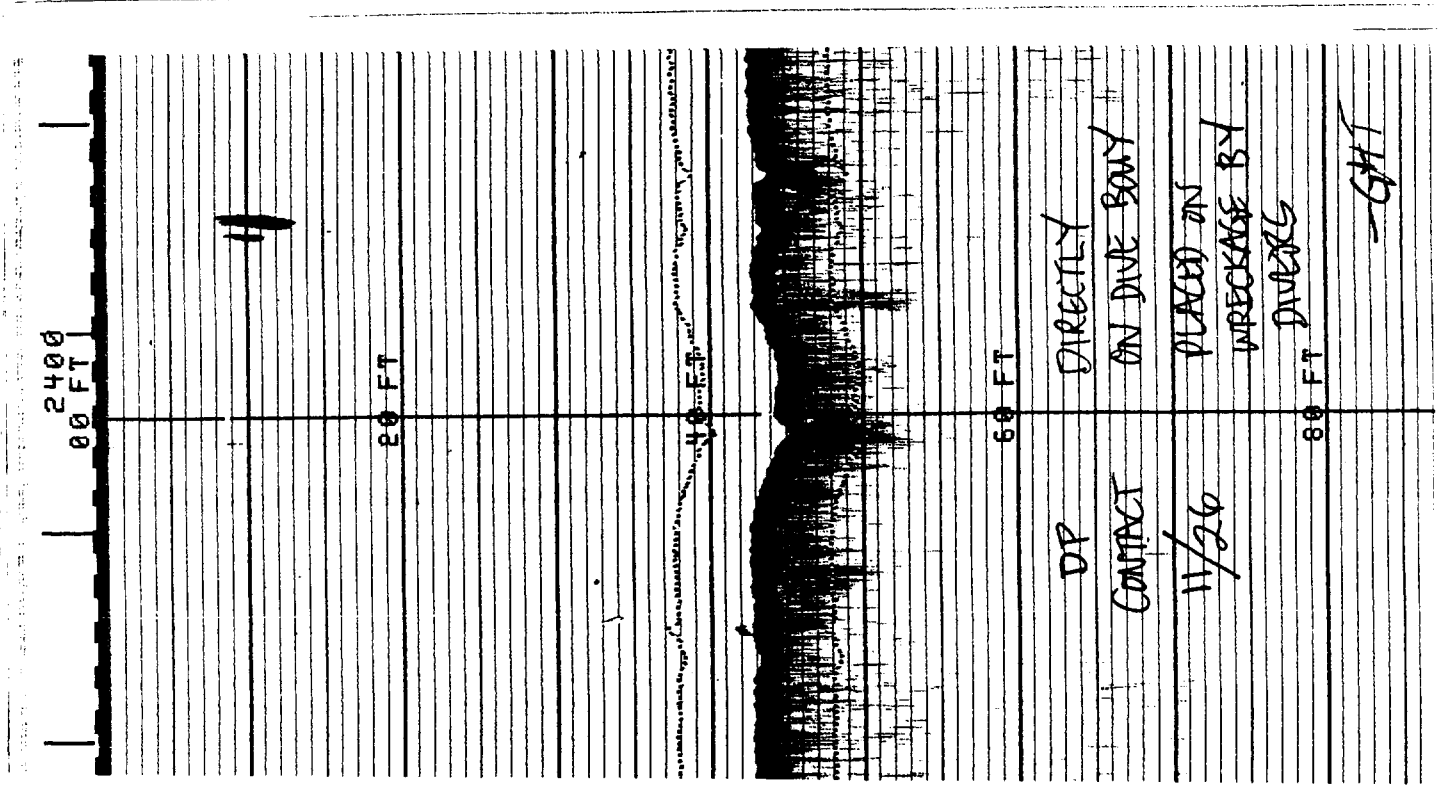
AWOIS ITEM 6490

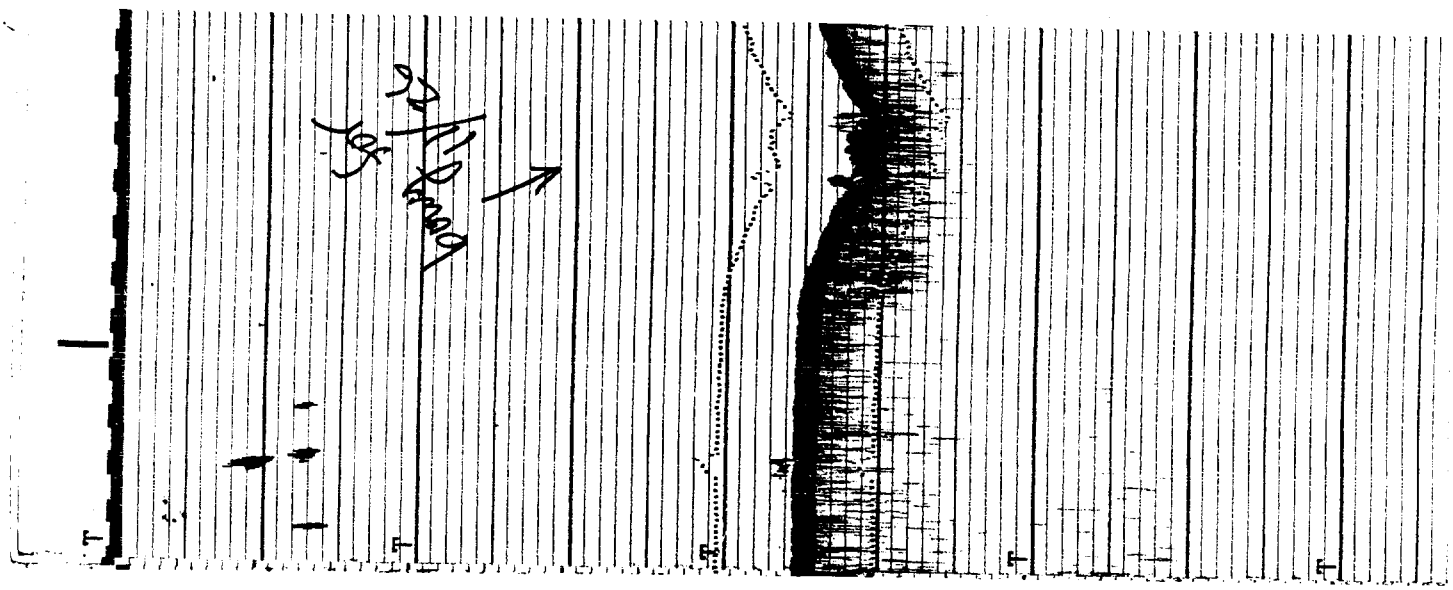
TARGET 11

MISCELLANEOUS METAL WRECKAGE AT 50 FEET



AWOIS ITEM 6490
TARGET 11





NAVISOFT 300 VER 2.31EX-SURVEY: UTILITIES: MTM -> LAT/LON 9 Oct 17:20:25

sting.....: 104453.1
Northing.....: 20578.2

Latitude.....: 040:56:07.065
Longtitude.....: 073:36:49.642

User 1 Caps Running

HELP Dump Alpha Dump Graphics

	Time	Tide Corr. Units FEET
251	17:00	-4.3
251	17:06	-4.2
251	17:12	-4.0
251	17:18	-3.8
251	17:24	-3.7
251	17:30	-3.5
251	17:36	-3.4
251	17:42	-3.2
251	17:48	-3.0
251	17:54	-2.9
251	18:00	-2.7
251	18:06	-2.6
251	18:12	-2.4
251	18:18	-2.3
251	18:24	-2.2
251	18:30	-2.0
251	18:36	-1.9
251	18:42	-1.8
251	18:48	-1.6
251	18:54	-1.5
251	19:00	-1.4
251	19:06	-1.3
251	19:12	-1.2
251	19:18	-1.1
251	19:24	-1.0
251	19:30	-1.0
251	19:36	-.9
251	19:42	-.8
251	19:48	-.8
251	19:54	-.7
251	20:00	-.7
251	20:06	-.6
251	20:12	-.6

K 9.4 CONTACT INVESTIGATION REPORT TARGET NUMBER 15, 19

DETERMINATION OF DIVE SITE : The contact was identified by SSS survey and was labeled as contact numbers 15 and 19 in the target abstract. The HECK was maneuvered into the vicinity of the SSS contact. When evidence of the wreck showed on the fathometer, a dive buoy was deployed.

SEARCH PROCEDURE : Divers LT(jg) Beaver and LT Tuell descended the buoy line and quickly found the wreck. The buoy weight had fallen near its starboard bow. The buoy was moved to the bow and a circle search was performed in order to find the highest point. The buoy was then moved to the high point.

LEAST DEPTH DATA : The pneumofathometer airline was lowered to the wreck down the buoy line. The orifice of the airline was held over the least depth. ST Morris and AB Jones manned the pneumofathometer in the ship's SISU launch.

The dive was completed on **September 1, 1988 (DOY 245).** Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004 N): Position Number 23ϕϕ

1) TIME (UTC) :	1316	RAW LEAST DEPTH READING (FT) :	50.5
2)	1316		50.5
3)	1316		50.6
		AVG LEAST DEPTH READING (FT) :	50.5

MEASURED DEPTH : 50.5 FEET
TIDAL CORRECTOR : - 0.~~8~~2
Pneumatic Depth Gau. Corr: - ϕ.3
LEAST DEPTH : ~~50.2~~ FEET
5ϕ.ϕ

GENERAL STATEMENT OF POSITION QUALITY : The HECK was maneuvered into close proximity of the dive buoy. When the wreck was visible on the fathometer, FIX 2300 was taken. The position was determined using three MiniRanger LOP's with a maximum residual of 1.7 meters and a 95% confidence error circle radius of 2.5 meters.

POSITION OF CONTACT: LAT: 40° 56' 58.752" N
(NAD 83) LONG: 073° 37' 40.288" W

LORAN CHAIN : 9960 RATES: W - 15352.4 ; X - 26895.2
Y - 43967.1 ; Z - 60007.1

The HDAPS utility package was used to convert survey MTM coordinates to geographic position.

ITEM DESCRIPTION : The divers found the remains of a 70-foot steel barge resting upright on a muddy bottom in about ~~50~~ 57-58 feet of water. The wreck is grown over with marine growth but is not yet badly deteriorated.

The wreck is slightly higher at the bow. No object protrudes above the barge itself for more than a height of two feet. The least depth was found to be the most forward mooring bit on the wreck.

RECOMMENDATIONS : The wreck is not presently charted. It rises 6 feet off the bottom in depths of about ~~50~~ 57-58 feet.

The HECK recommends that the wreck be charted as a sunken wreck, not dangerous to navigation, with a known depth of 50 feet. - Concur.

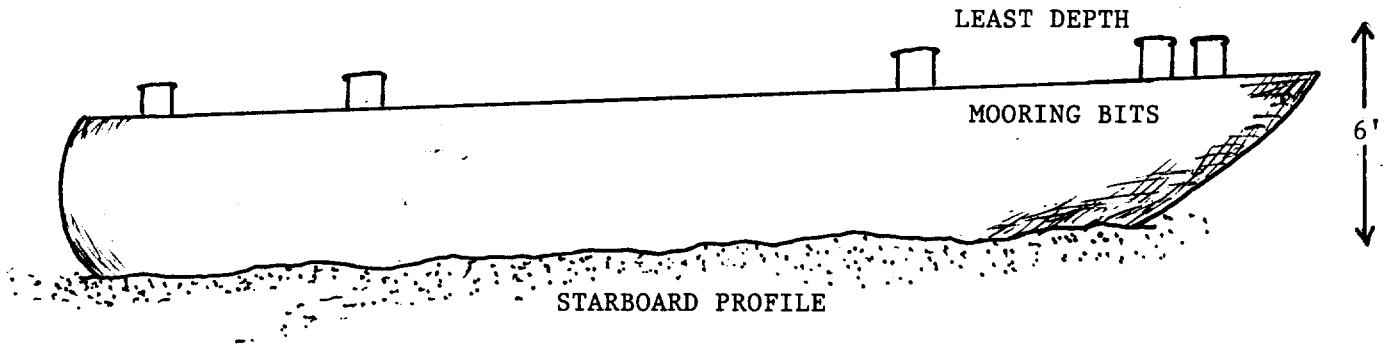
See sheet 12 of 14.

AWOIS ITEM 6490

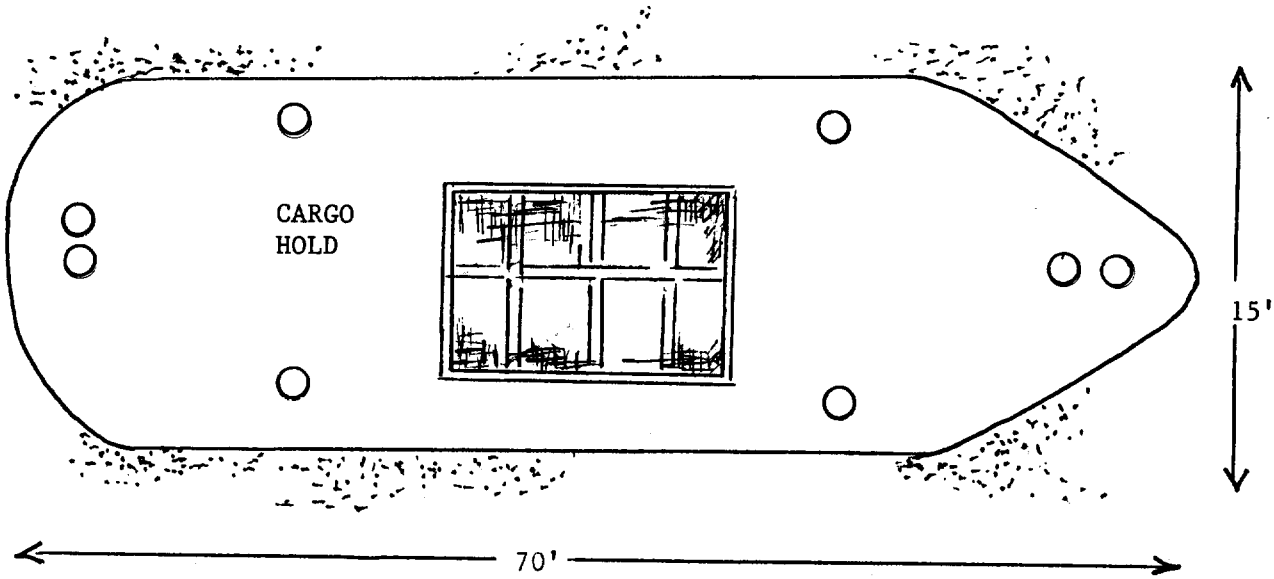
SSS CONTACT 15

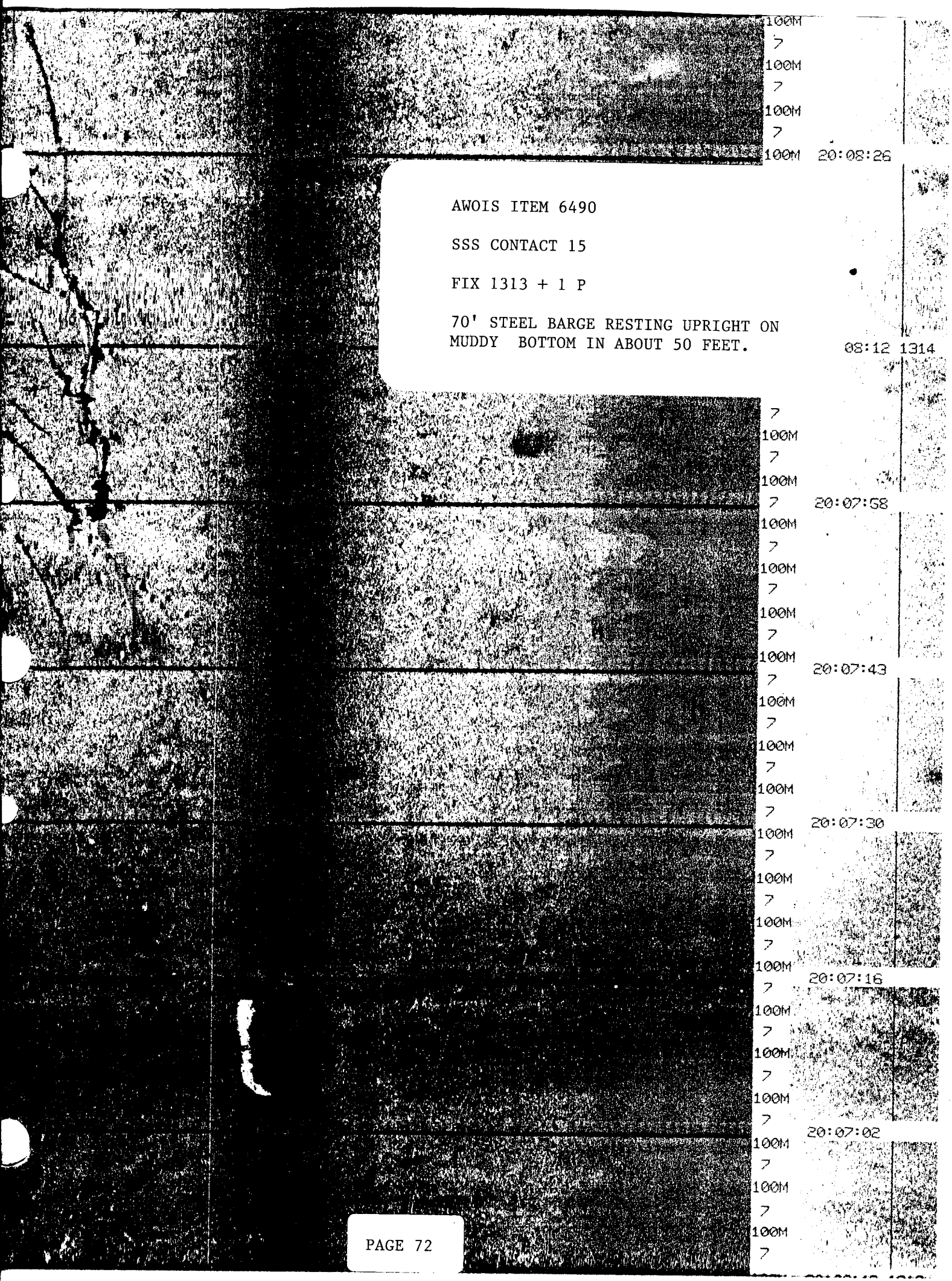
TIME: SEPTEMBER 1, 1988 09:16 LMT (13:16 GMT)

PNEUMOFATHOMETER DEPTH = 50.5 FEET
TIDAL CORRECTOR = - 0.3 2
Pneumatic Depth Gauge Corr = - 0.3
LEAST DEPTH OVER WRECK = ~~50.2~~ FEET
50.0



STARBOARD PROFILE



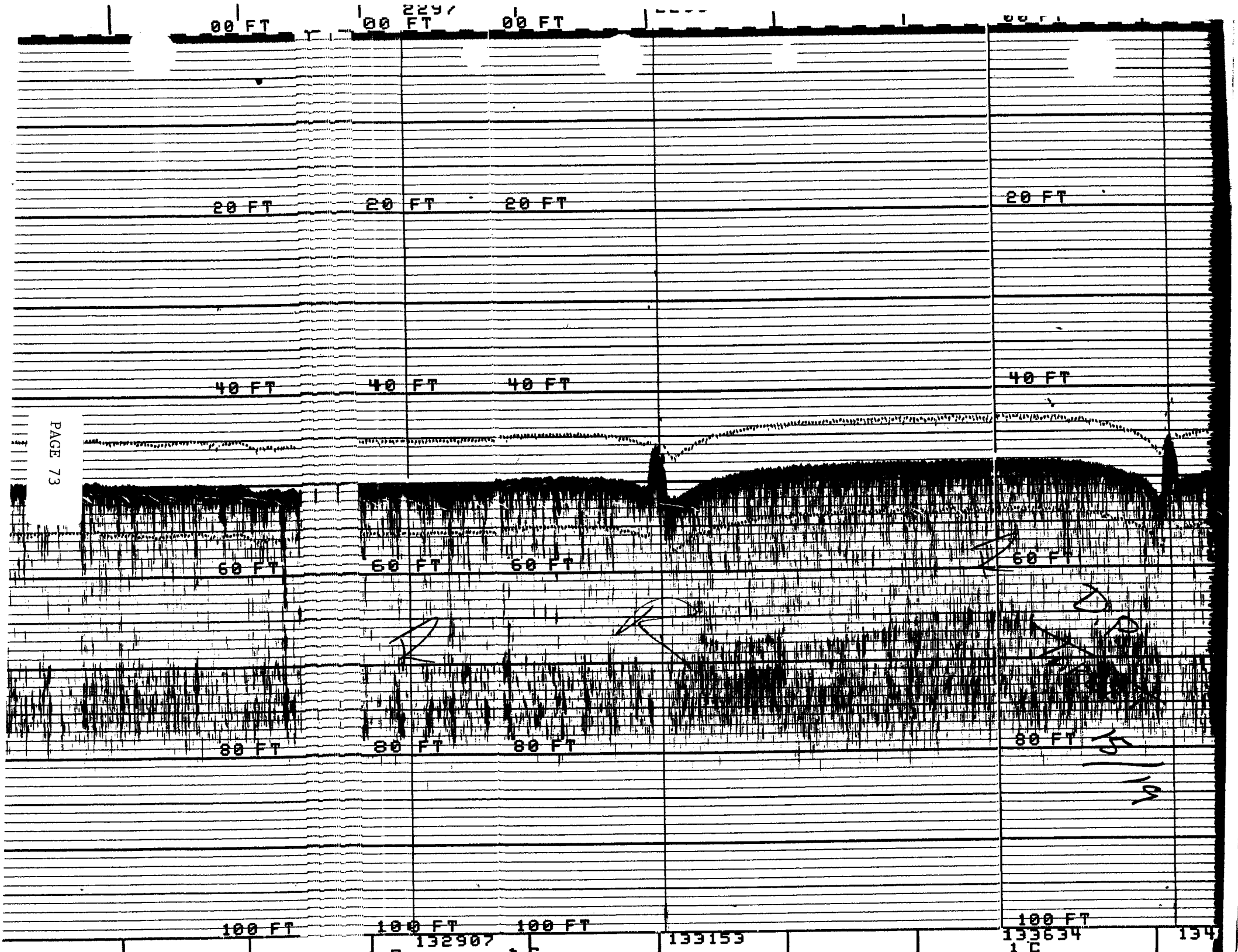


AWOIS ITEM 6490

SSS CONTACT 15

FIX 1313 + 1 P

70' STEEL BARGE RESTING UPRIGHT ON MUDDY BOTTOM IN ABOUT 50 FEET. 08:12 1314


00 FT
00 FT
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20 FT
20 FT
20 FT
20 FT
40 FT
40 FT
40 FT
40 FT
60 FT
60 FT
60 FT
60 FT
80 FT
80 FT
80 FT
80 FT
100 FT
100 FT
100 FT
132907
133153
133634
134

NAVISOFT 300 VER 2.31EX-SURVEY: UTILITIES: MTM -> LAT/LON 9

19:04:57

Easting.....: 103267.6_
Northing.....: 22172.0

Latitude.....: 040:56:58.752
Longtitude.....: 073:37:40.288

User 1 Caps Running

HELP Dump Alpha Dump Graphics ■

Day	Time	Tide Corr.	Units FEET
245	13:00	-.5	
245	13:06	-.4	
245	13:12	-.4	
245	13:18	-.3	←
245	13:24	-.2	
245	13:30	-.1	
245	13:36	-.1	
245	13:42	-0.0	
245	13:48	0.0	
245	13:54	0.0	
245	14:00	.1	
245	14:06	.1	
245	14:12	.1	
245	14:18	.1	
245	14:24	.1	
245	14:30	.1	
245	14:36	0.0	
245	14:42	-0.0	
245	14:48	-.1	
245	14:54		

K 9.5 CONTACT INVESTIGATION REPORT TARGET 17

DETERMINATION OF DIVE SITE : The contact was identified by SSS survey and was labeled as contact number 17 in the target abstract. The HECK was maneuvered over the position of the target. When evidence of the wreck was visible on the echosounder, a dive buoy was deployed.

SEARCH PROCEDURE : Divers LT(jg) Beaver and LT Tuell descended the buoy line and attached a tagline to the buoy weight. A circle search was performed around the buoy and the wreck was located about ten meters away from where the weight had fallen. The buoy was moved onto the wreck and divers then swam the length of the wreck to locate the highest point. The buoy weight was then moved to the high point.

LEAST DEPTH DATA : The pneumofathometer airline was lowered down the buoy line to the wreck. The orifice of the line was held over the least depth. ST Morris and AB Jones manned the pneumofathometer in the ship's SISU launch.

The dive was completed on September 2, 1988 (DOY 246). Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004 N): Position Number 2409

1) TIME (UTC) :	1729	RAW LEAST DEPTH READING (FT) :		52.8
2)	1729			53.0
3)	1729			53.0
		AVG LEAST DEPTH READING (FT) :		52.9

MEASURED DEPTH :	52.9 FEET	
TIDAL CORRECTOR :	- ~~2.6~~ 4.6	
Pneumatic Depth Gage	- 0.3	
LEAST DEPTH :	~~50.3~~ FEET	
	48.0	

GENERAL STATEMENT OF POSITION QUALITY : Two separate detached positions were taken on the wreck. The two positions disagree by approximately 10 meters.

The first detached position taken over the wreck is FIX 2382 , LAT 040° 57' 20.973" ; LONG 073° 36' 55.394". This fix was taken over the dive buoy and had a maximum residual of 5.8 meters and a 95% confidence error circle radius of 3.0 meters. Because of the high maximum residual, a second fix was taken over the wreck six days later when stronger control was available.

FIX 2409 was taken by maneuvering the HECK into the vicinity of the coordinates obtained at FIX 2382. When the wreck was visible on the fathometer, the second fix was taken. The position was determined using the HDAPS system and three MiniRanger LOP's. The maximum residual on the computed position was 0.6 meters and the 95% confidence error circle radius was 6.0 meters.

Position Number 2409

POSITION OF CONTACT: LAT: 40° 57' 20.922" N
(NAD 83) LONG: 073° 36' 55.830" W

LORAN CHAIN : 9960 RATES: W - 15347.4 ; X - 26890.3
Y - 43969.4 ; Z - 60009.3

The HECK recommends that FIX 2409 be used to position the wreck due to the smaller maximum residual.

The HDAPS utility program was used to transform MTM survey coordinates to geographic position.

ITEM DESCRIPTION : Divers found the remains of a 50 foot wooden sport fishing boat resting upright in a muddy bottom. The boat is listing to starboard and its starboard rail is buried in the mud. Most of the paint and fittings remain on the wreck and marine growth is not well established. A current scour has been cut under the port side of the wreck. The least depth was taken on a navigation light on the back of the cabin.

RECOMMENDATIONS : This wreck is not presently charted. It was found just outside of the prescribed search radius (2000 meters) for AWOIS item 6490. The wreck is most likely the AWOIS item; it is the only fishing vessel found in the area and the age of the wreck is probably between 5 and 10 years.

The wreck rises about 8 feet off the bottom in ~~55~~ 56-57 feet of water. It is not considered a danger to navigation; however, because of its eight foot height in fifty five feet of water, Heck recommends that this wreck be charted as a sunken wreck, dangerous to surface navigation, known depth ~~50~~ 48 feet.

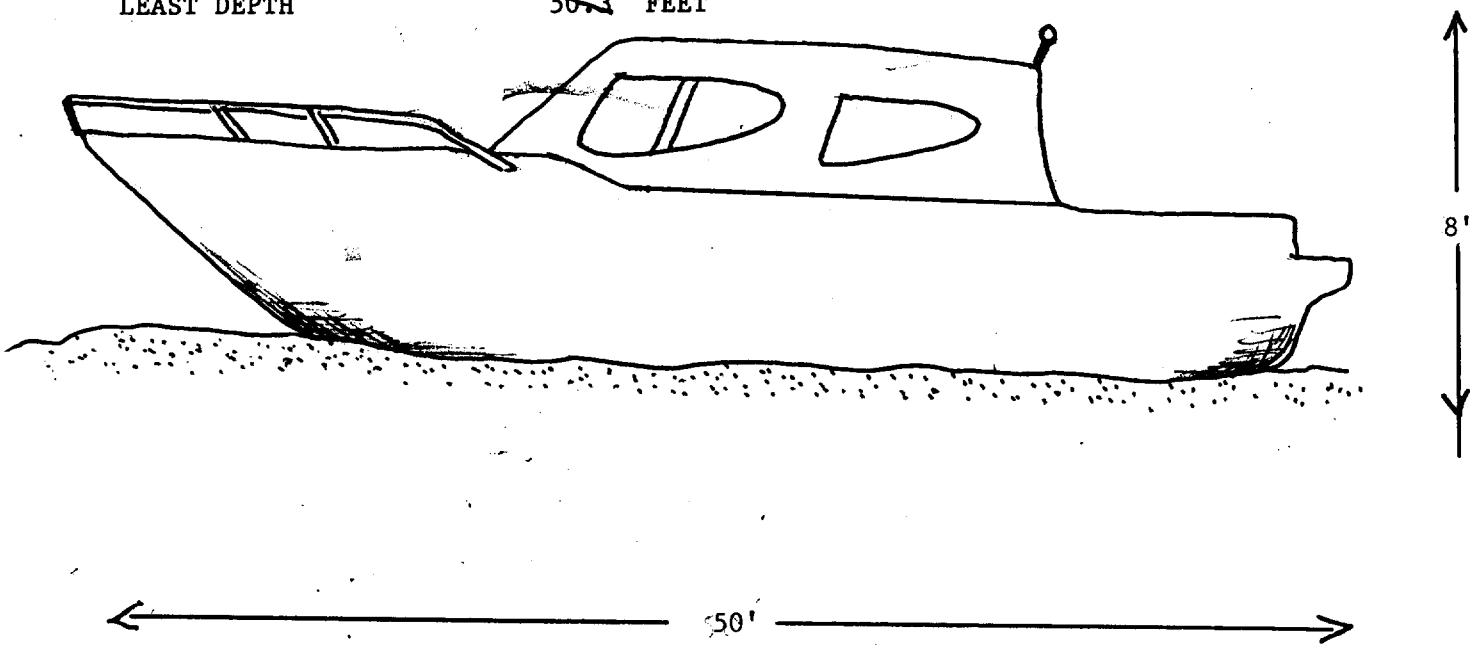
AWOIS item 6490 is considered RESOLVED. ✓

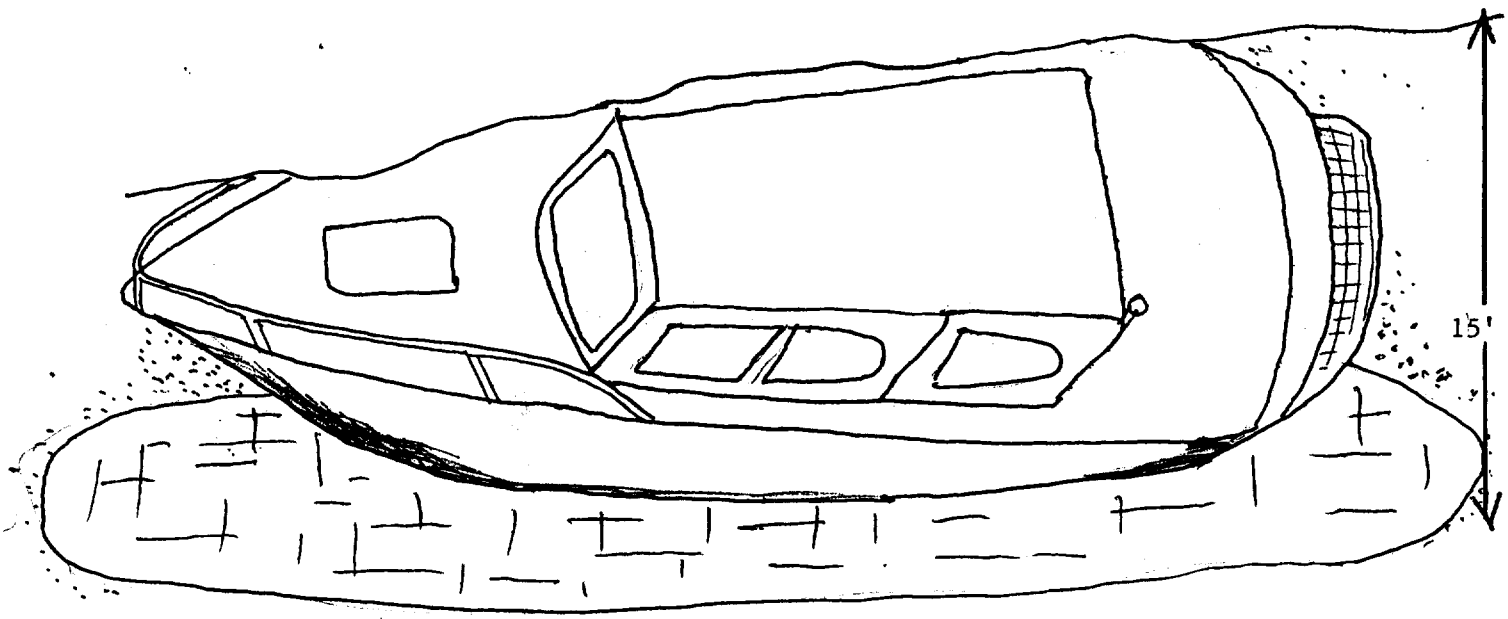
See sheet 12 of 14.

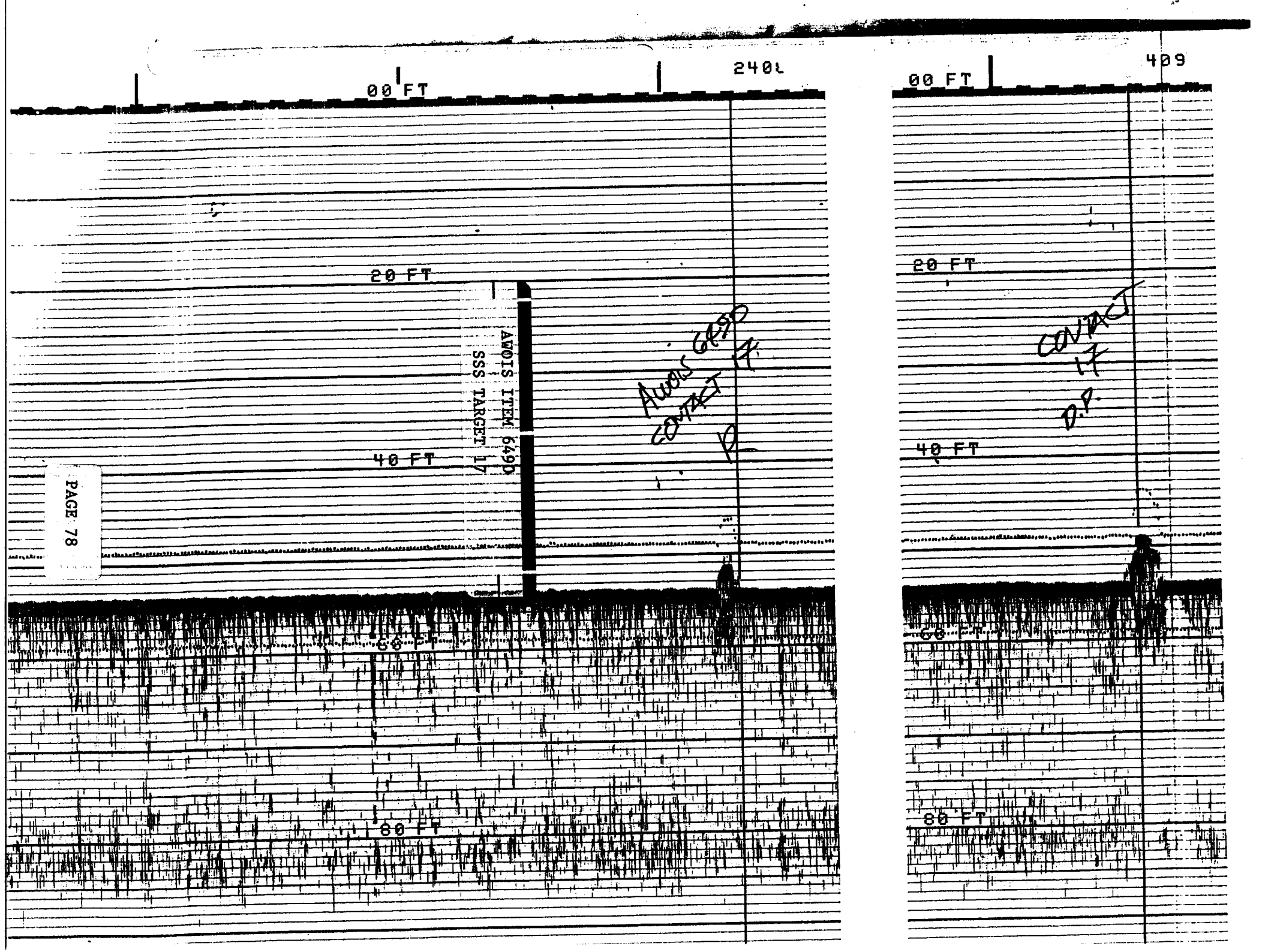
AWOIS ITEM 6490

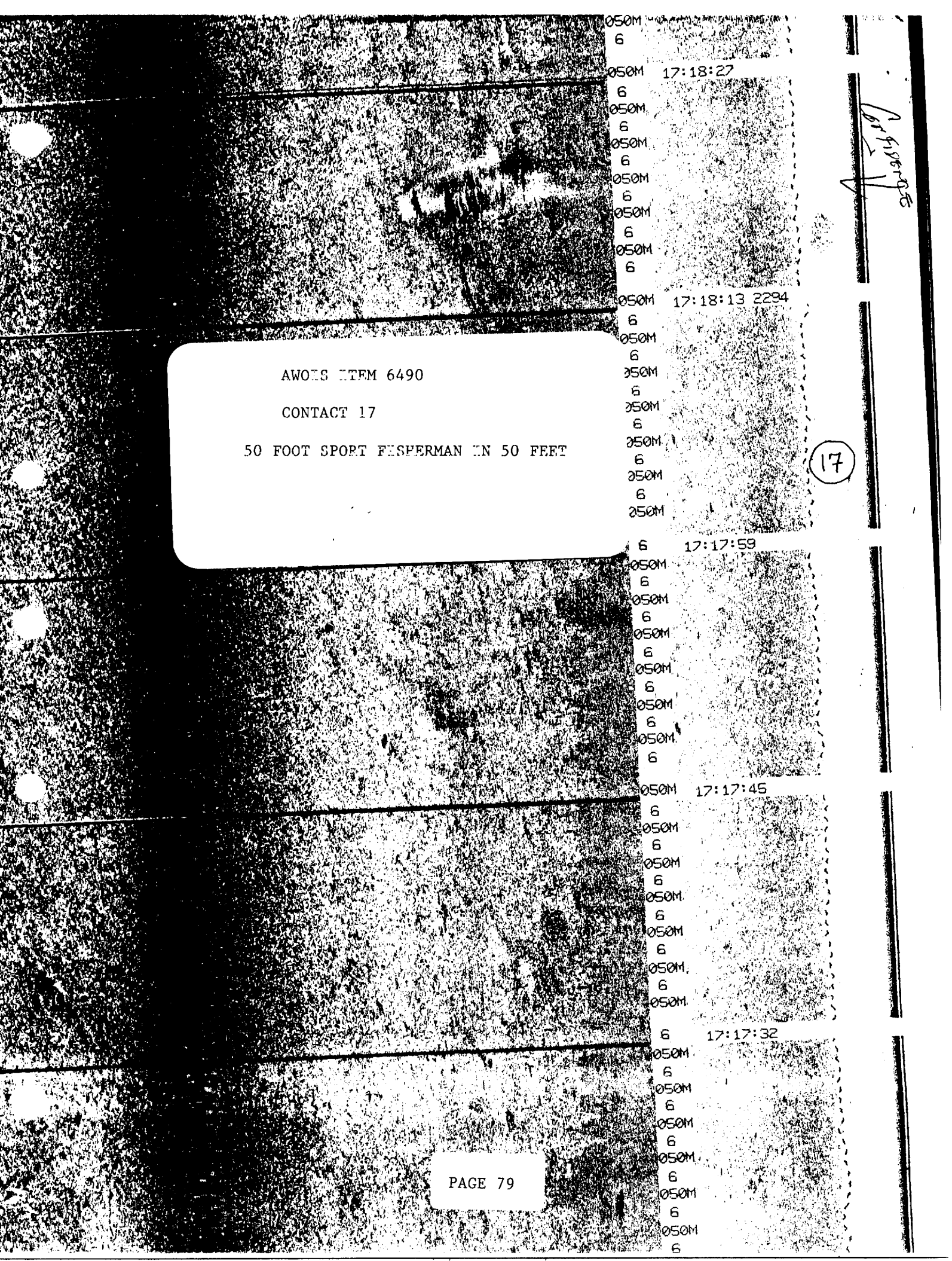
SSS TARGET 17

PNEUMOFATHOMETER DEPTH = 52.9 FEET
Pneumatic Depth Gauge Corr = - 0.3
TIDAL CORRECTOR = - 2.6 4.6
48.0
LEAST DEPTH ~~50.3~~ FEET






00 FT
2401
20 FT
AWOIS ITEM 6490
SSS TARGET 17
AWOIS DEP
CONTACT
40 FT
60 FT
80 FT
PAGE 78
00 FT
409
20 FT
CONTACT
17
D.P.
40 FT
60 FT
80 FT



AWOIS ITEM 6490

CONTACT 17

50 FOOT SPORT FISHERMAN IN 50 FEET

050M
6
050M 17:18:27
6
050M
6
050M
6
050M
6
050M
6
050M 17:18:13 2284
6
050M
6
050M
6
050M
6
050M
6
050M
6
6 17:17:59
050M
6
050M
6
050M
6
050M
6
050M
6
050M 17:17:45
6
050M
6
050M
6
050M
6
050M
6
050M
6
050M
6 17:17:32
050M
6
050M
6
050M
6
050M
6
050M
6
050M
6

17

PAGE 79

Sat 13:01:59

Easting.....: 104307.0
Northing.....: 22856.4

Latitude.....: 040:57:20.922
Longtitude.....: 073:36:55.830

User 1 Caps Running

HELP Dump Alpha Dump Graphics

Day	Time	Tide Corr. Units FEET	
246	17:00	-1.8	
246	17:06	-1.9	
246	17:12	-2.1	
246	17:18	-2.2	
246	17:24	-2.4	
246	17:30	-2.6	←
246	17:36	-2.7	
246	17:42	-2.9	
246	17:48	-3.1	
246	17:54	-3.3	
246	18:00	-3.5	
246	18:06	-3.7	
246	18:12	-3.8	
246	18:18	-4.0	
246	18:24	-4.2	
246	18:30	-4.4	
246	18:36	-4.6	
246	18:42	-4.8	
246	18:48	-5.0	
246	18:54	-5.1	
246	19:00	-5.3	
246	19:06	-5.5	
246	19:12	-5.6	
246	19:18	-5.8	
246	19:24	-6.0	
246	19:30	-6.1	
246	19:36	-6.3	
246	19:42		

K 9.6 CONTACT INVESTIGATION REPORT TARGET 21

DETERMINATION OF DIVE SITE : The contact was identified by SSS survey and was labeled as contact number 21 in the target abstract. The HECK was maneuvered over the position of the SSS target. When evidence of the contact was visible on the echosounder, a dive buoy was deployed.

SEARCH PROCEDURE : Divers descended the buoy line and attached a tagline to the buoy weight. A circle search was performed around the buoy.

LEAST DEPTH DATA : No depth measurements were taken.

GENERAL STATEMENT OF POSITION QUALITY : The reported position was determined from the SSS records. The position is most likely accurate to within 10 meters.

POSITION OF CONTACT: LAT: 40° 56' 18.018" N
LONG: 073° 37' 01.710" W

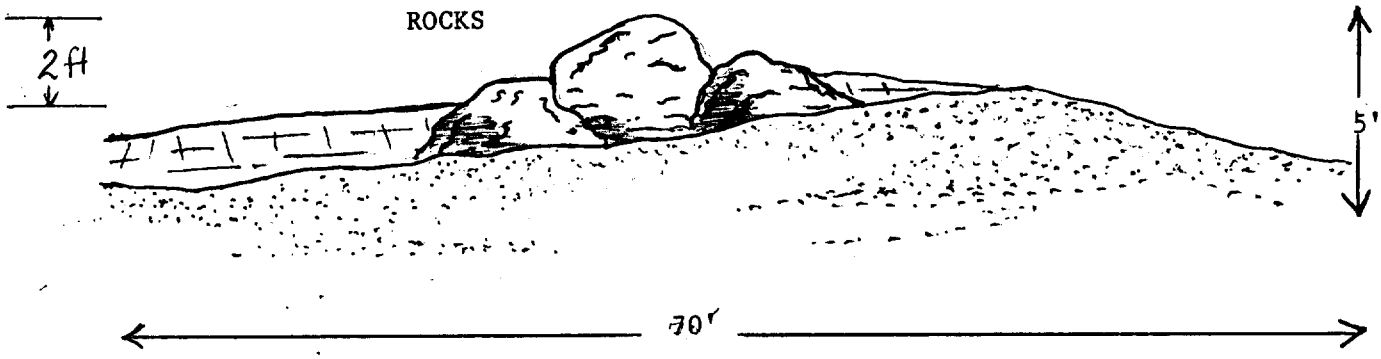
ITEM DESCRIPTION : Divers located several large boulders in a current scour. The rocks rise about two feet above the general trend of the bottom.

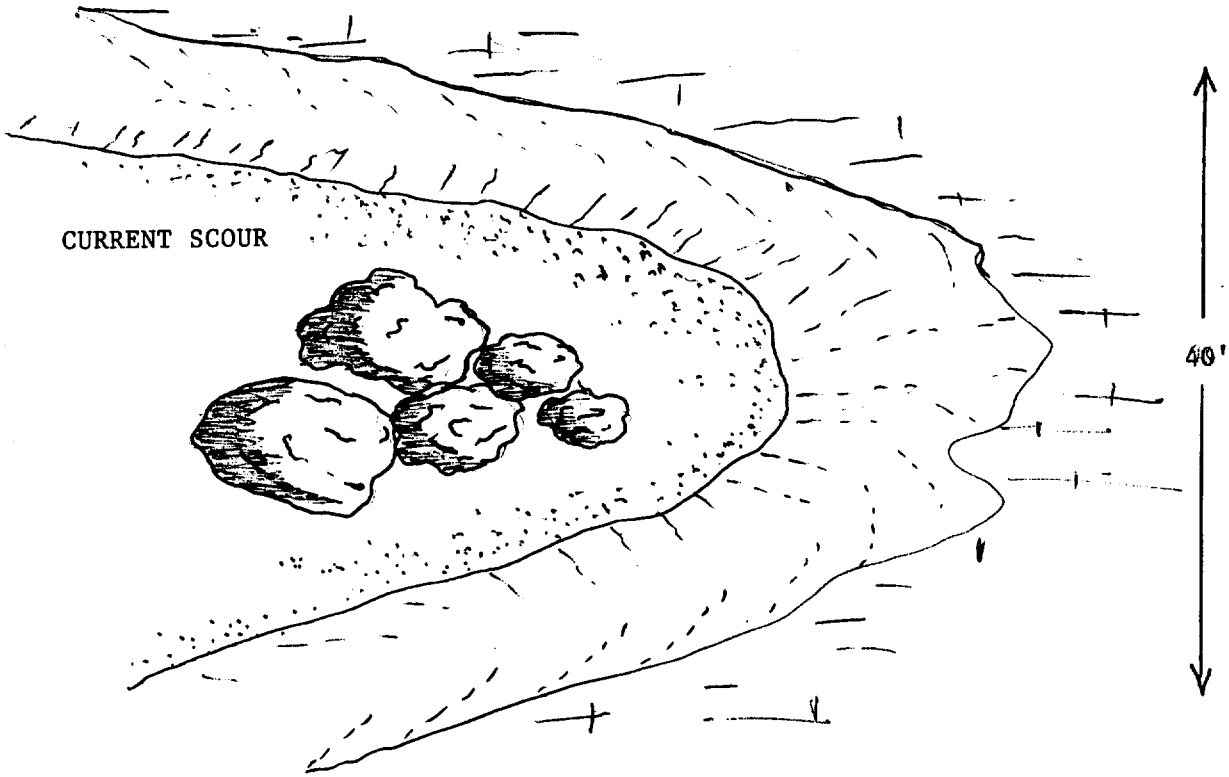
RECOMMENDATIONS : Nothing of charting importance was found. This dive report is submitted to correlate an insignificant side scan target with a diver investigation. - Concur

AWOIS ITEM 6490

SSS TARGET 21

PNEUMOFATHOMETER DEPTH = NOT TAKEN (item insignificant for charting)





AWOIS ITEM 6490

SSS TARGET 21

SEVERAL ROCKS IN CURRENT SCOUR IN 70 FEET

100M 19:04:5
5
100M
5
100M
5
100M
5
100M 19:04:4
5
100M
5
100M
5
100M 19:04:2
5
100M
5
100M
5
100M 19:04:13
5
100M
5
100M
5
100M 19:03:52
5
100M
5
100M
5
100M 19:03:45
5
100M
5
100M
5
100M 19:03:30
5
100M
5
100M
5
100M 19:03:17
5
100M
5
100M
5
100M 19:03:03
5
100M
5
100M
5
100M 19:02:48
5
100M

K 9.7 CONTACT INVESTIGATION REPORT TARGET 27

DETERMINATION OF DIVE SITE : The contact was identified by SSS survey and was labled as contact number 27 in the target abstract. The HECK was maneuvered over the position of the target. When evidence of the wreck was visible on the echosounder, a dive buoy was deployed.

SEARCH PROCEDURE : Divers LT(jg) Beaver and LT Tuell descended the buoy line and found that the buoy weight had fallen onto a level muddy bottom. A tagline was attached to the buoy weight and a circle search was performed. A large pile of gravel was found nearby. The dive buoy was moved to the pile of gravel and a second circle search was performed to find the high point.

LEAST DEPTH DATA : The pneumofathometer airline was lowered down the buoy line to the wreck. The orifice of the line was held over the least depth which had been located visually. ST Morris and AB Jones manned the pneumofathometer in the ship's SISU launch.

The dive was completed on **September 2, 1988 (DOY 246)**. Three readings were taken on the 0-70 foot pneumofathometer (S/N 8607004 N): Position number 24ϕ7

1) TIME (UTC)	:	1334	RAW LEAST DEPTH READING (FT)	:	50.8
2)		1334			50.8
3)		1334			51.0
			AVG LEAST DEPTH READING (FT)	:	50.9

MEASURED DEPTH : 50.9 FEET
TIDAL CORRECTOR : - 1.5ϕ
Pneu. Depth Gauge Corr: - ϕ.3
LEAST DEPTH : 49.4 FEET
6

GENERAL STATEMENT OF POSITION QUALITY : Two separate positions were obtained for the wreck. The two positions differ by approximately 3 meters.

The first detached position taken over the wreck is FIX 2232 , LAT 040° 56' 50.057" ; LONG 073° 36' 10.687". This fix was taken over the dive buoy using three MiniRanger LOP's and had a maximum residual of 7.7 meters and a 95% confidence error circle radius of 2.6 meters.

A second position was taken over the wreck on DOY 252 in an effort to obtain a position with a lower maximum residual. The second position, FIX 2407, LAT: 40° 57' 20.909" ; LONG: 073° 36' 55.830" , was computed using two MiniRanger LOP's and had a 95% confidence error circle radius of 5.2 meters and a maximum residual of 0.5 meters. The wreck was located by steering to the coordinates of FIX 2232 and watching for evidence of the wreck on the fathometer.

POSITION OF CONTACT: (NAD83) LAT: 40° 56' 50.057" N
LONG: 073° 36' 10.688" W

LORAN CHAIN : 9960 RATES: W - 15343.3 ; X - 26882.5
Y - 43963.4 ; Z - 60007.9

The HDAPS utility program was used to transform MTM survey coordinates to geographic position.

ITEM DESCRIPTION : Divers found the remains of a wooden gravel barge resting upright on a muddy bottom in about ~~50~~ 49 feet of water. The wreck is nearly completely covered by the strewn gravel. The remains of the wooden bow were found near one end of the pile of gravel. The highest point of the gravel pile is about three feet higher than any wreckage from the barge itself. The area around the wreck is heavily populated with lobster and flounder.

RECOMMENDATIONS : The wreck is not presently charted. Although depths on the gravel pile rise 6 to 8 feet above the surrounding bottom, the wreck itself is badly deteriorated. Therefore, the HECK recommends that this wreck be charted as a sunken wreck, not dangerous to navigation, with a known depth of 49 feet.

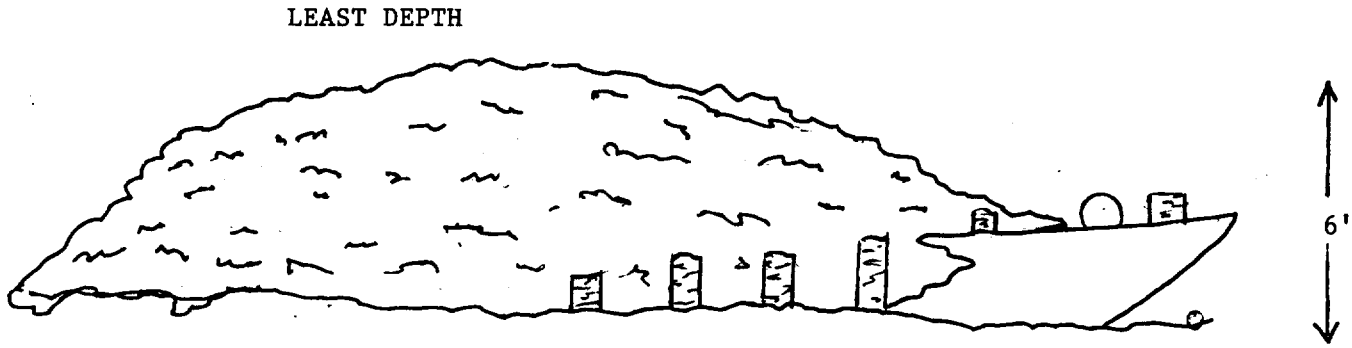
See sheet 13 of 14

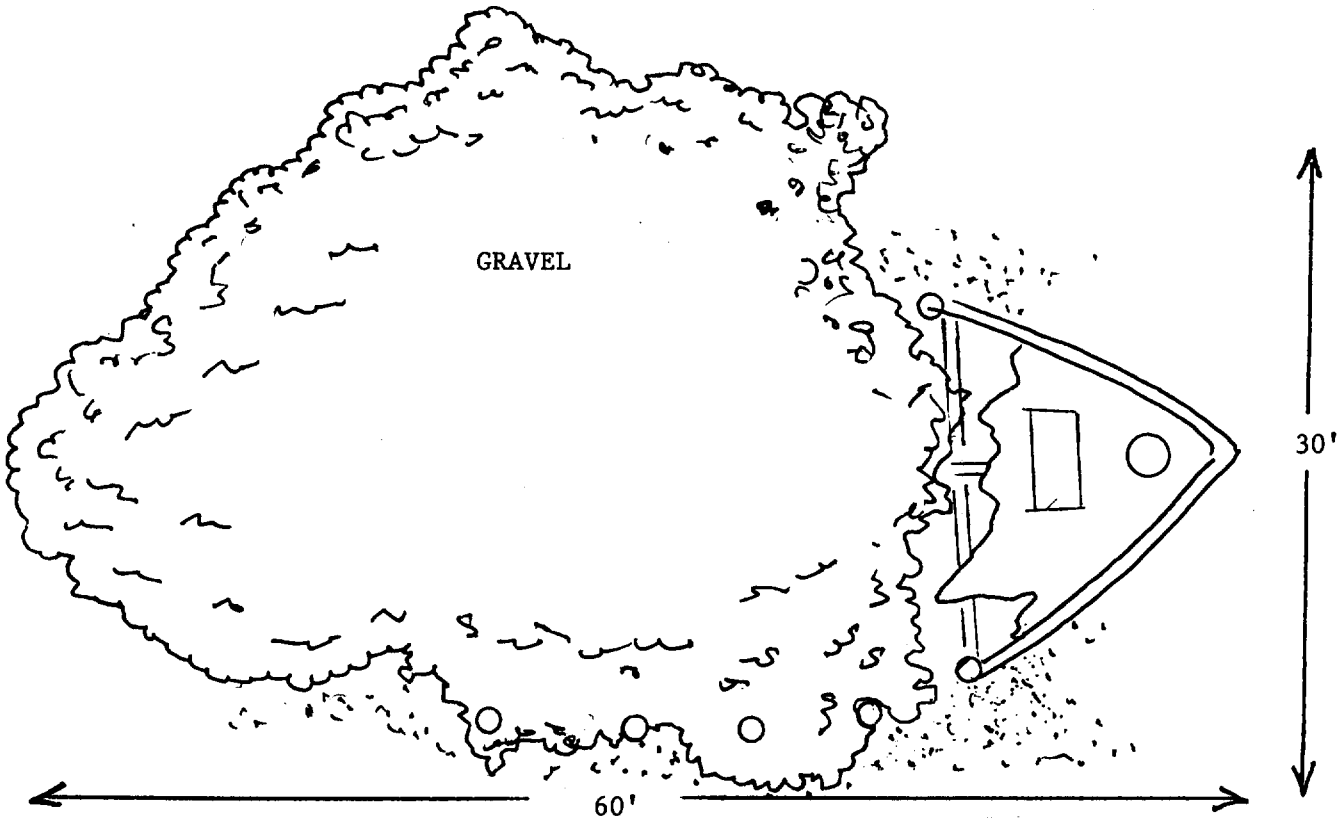
AWOIS ITEM 6490

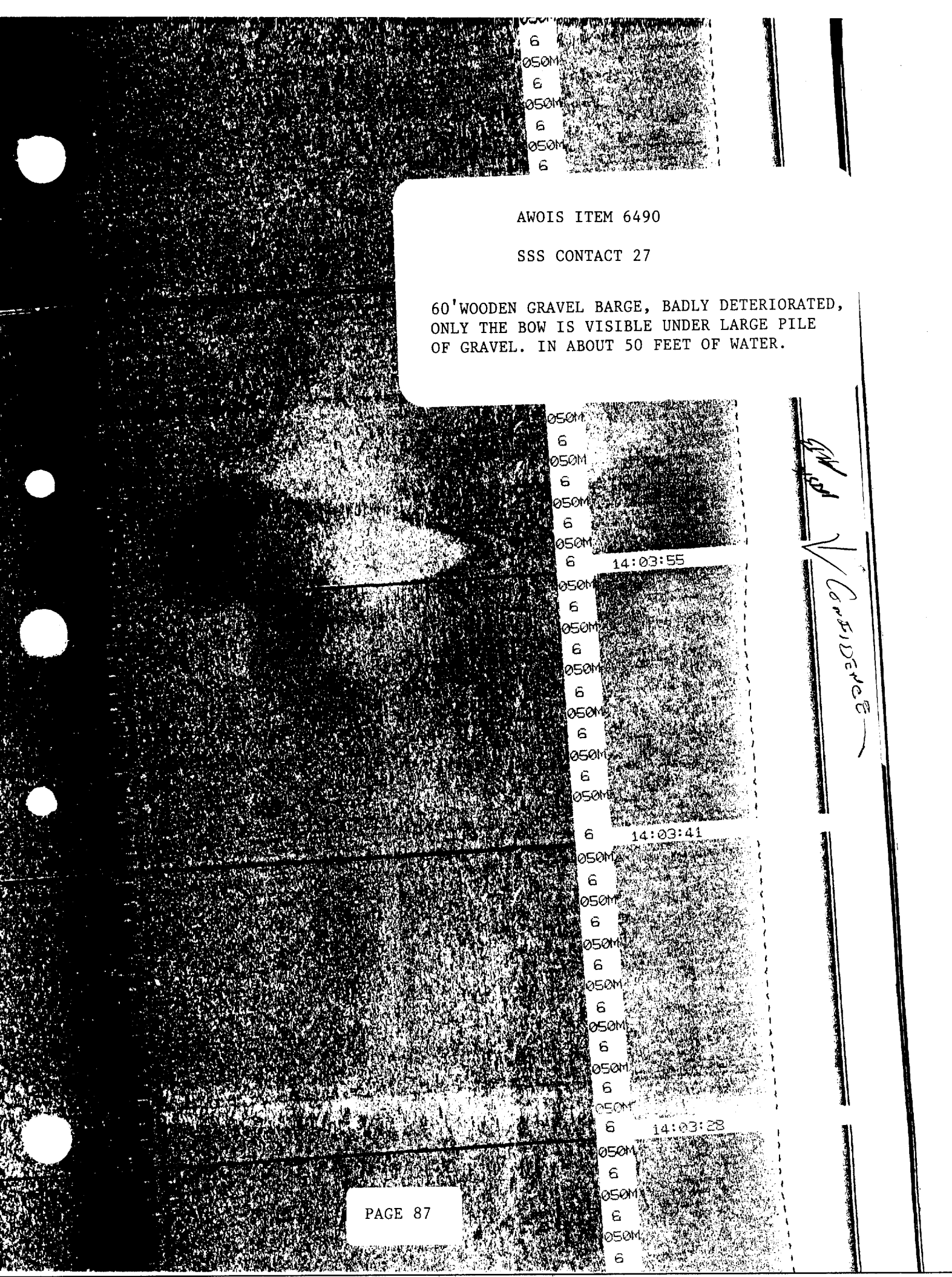
SSS CONTACT 27

TIME: SEPTEMBER 2, 1988 0934 LMT (1334 GMT)

PNEUMOFATHOMETER DEPTH	= 50.9 FEET
TIDAL CORRECTOR	= - 1.5
LEAST DEPTH OVER WRECK	= 49.4 FEET



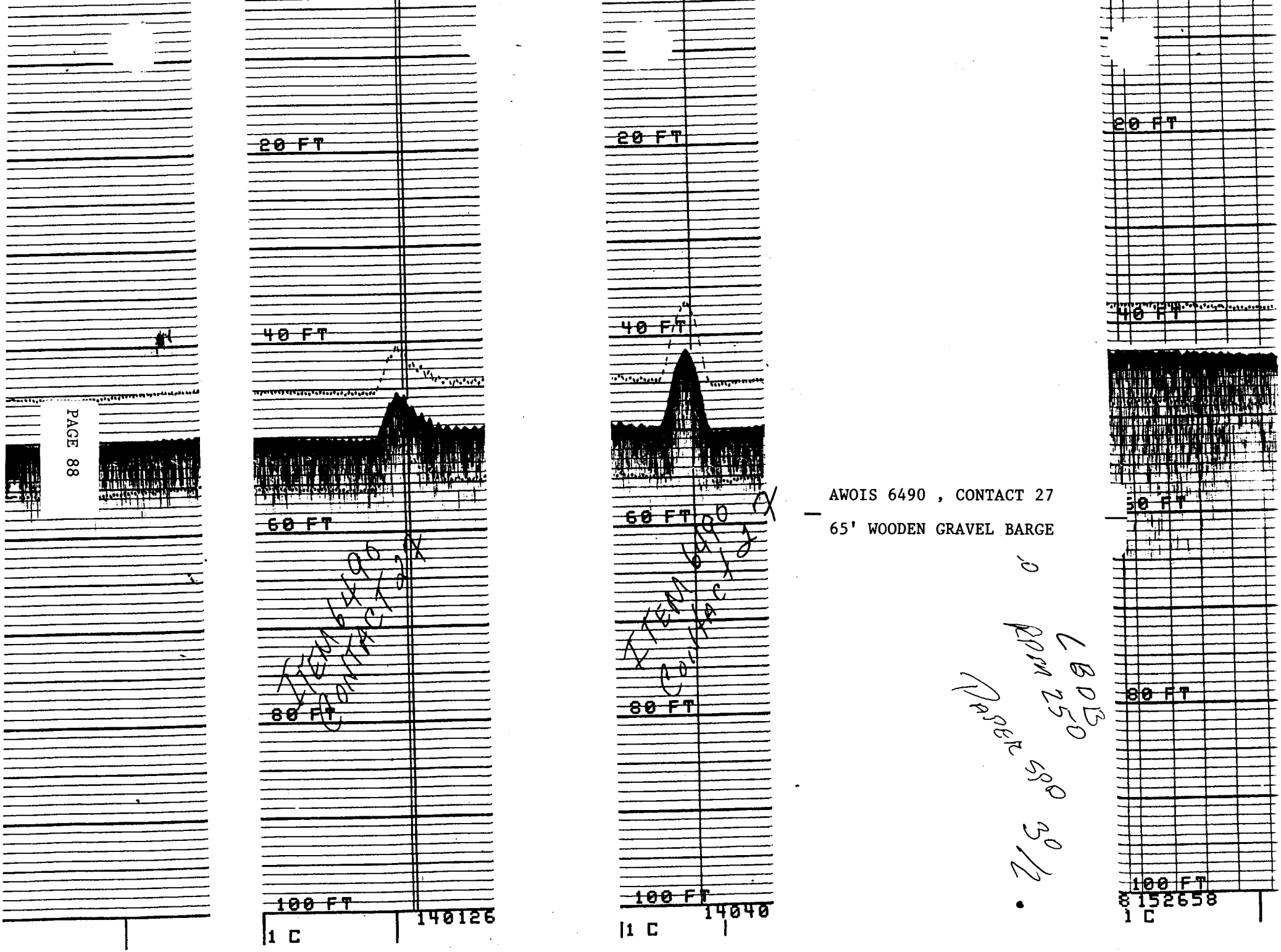




AWOIS ITEM 6490

SSS CONTACT 27

60'WOODEN GRAVEL BARGE, BADLY DETERIORATED, ONLY THE BOW IS VISIBLE UNDER LARGE PILE OF GRAVEL. IN ABOUT 50 FEET OF WATER.



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AWOIS 6490 , CONTACT 27

65' WOODEN GRAVEL BARGE

NAVISOFT 300 VER 2.31EX-SURVEY: UTILITIES: MTM -> LAT/LON 9

18:01:57

Easting.....: 105363.4
Northing.....: 21905.0

Latitude.....: 040:56:50.057
Longtitude.....: 073:36:10.688

User 1 Caps Running

HELP Dump Alpha Dump Graphics

Day	Time	Tide Corr. Units FEET
246	12:00	-3.7
246	12:06	-3.6
246	12:12	-3.4
246	12:18	-3.3
246	12:24	-3.1
246	12:30	-3.0
246	12:36	-2.8
2	12:42	-2.6
246	12:48	-2.5
246	12:54	-2.4
246	13:00	-2.2
246	13:06	-2.1
246	13:12	-1.9
246	13:18	-1.8
246	13:24	-1.7
246	13:30	-1.5
246	13:36	-1.4
246	13:42	-1.3
246	13:48	-1.2
246	13:54	-1.1
246	14:00	-1.0
246	14:06	-.9
246	14:12	-.8
	14:18	-.8
	14:24	-.7
246	14:30	-.6
246	14:36	-.6
246	14:42	-.5
246	14:48	-.5
246	14:54	-.5
246	15:00	

K 10. INVESTIGATION REPORT FOR AWOIS ITEM 6491

AWOIS HISTORY : H5078/30WD -- Two wire drag hangs in same location. Least depth of 48 feet. Drag brought large piece of wreckage to surface. Lat 40°56'22.0"N, Long 73°36'18.9"W (NAD 27)

SURVEY REQUIREMENTS : Full, Verify or disprove through 200% side scan sonar coverage, 200 meter radius, least depth and position required if found.

METHOD OF INVESTIGATION : The specified search radius was investigated by side scan sonar. The 100 meter range and 100khz frequency settings were used. Two hundred percent coverage was achieved by running two sets of three SSS lines each at orthogonal angles.

RESULTS OF INVESTIGATION : Six SSS lines were run in the immediate area of the reported position of the AWOIS item. These SSS lines are shown on the field and smooth plots for sheet HE-10-2-88. No significant contacts were found within the specified search radius.

No diver investigations were conducted on this AWOIS item.

RECOMMENDATIONS : This item is not charted on NOS Chart 12367, Greenwich Point to New Rochelle, 17th Edition, Nov. 1, 1986.

Nothing of charting significance was found during this survey.

AWOIS item 6491 is considered DISPROVED .- See also section 6.b.5) of the Evaluation Report.

See sheet 14 of 14.

Submitted By,

Grady H. Tuell, LT., NOAA
Executive Officer
NOAA Ship HECK

Reviewed By,

Andrew L. Beaver, LT(jg), NOAA
Operations Officer
NOAA Ship HECK

L. LETTER OF APPROVAL

Field operations contributing to the accomplishment of this survey were conducted under my direct supervision with frequent personal checks of progress and data quality. This report, field sheets, and data records have been closely reviewed and are complete and adequate for charting.

Christopher B. Lawrence, LCDR, NOAA
Commanding Officer
NOAA Ship HECK

LIST OF HORIZONTAL CONTROL STATIONS

NUMBER	NAME	POSITION
110	KALPAKJIAN	40° 54' 09.44379" 73° 37' 59.01029"
113	GREAT CAPTAIN IS LH 1882*	40° 58' 57.04399" 73° 37' 24.95527"
116	RYE	40° 56' 24.12111" 73° 41' 50.85923"
117	CAPTAIN 1967	40° 58' 57.54871" 73° 37' 22.02261"
n/a	FOX 1942 *	40° 54' 29.43469" 73° 35' 19.27755"
118	FOX ECCENTRIC	40° 54' 31.26546" 73° 35' 14.21455"
119	LLOYD POINT 1882	40° 56' 41.57231" 73° 29' 14.42905"
120	STAMFORD HARBOR LIGHTHOUSE *	41° 00' 49.14787" 73° 32' 33.27840"
209	MAMARONECK METH CHURCH SPIRE *	40° 57' 05.37639" 73° 43' 44.45625"
211	YELLOW CHIMNEY INCINERATOR *	40° 59' 30.63151" 73° 39' 35.22375"
212	JONES ROCKS BEACON *	40° 59' 18.05944" 73° 38' 05.24397"
213	BAYVILLE MUNICIPAL TANK *	40° 54' 22.76237" 73° 34' 00.33951"
214	FUN *	40° 58' 03.43507" 73° 40' 21.97791"
215	EATONS NECK LIGHTHOUSE *	40° 57' 14.34479" 73° 23' 43.78071"
216	GREENS LEDGE LIGHTHOUSE *	41° 02' 29.93649" 73° 26' 37.87241"
220	TWIN A 1930 *	40° 55' 54.80294" 73° 27' 57.84622"

* - Not used for survey operations.

CONTROL STATIONS

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY
[illegible]		040:49:29.999	073:47:10.000	0	250	0.0	0.0		07/19/88
3[illegible]		040:50:00.000	073:46:17.999	0	250	0.0	0.0		07/19/88
389		040:50:16.800	073:45:49.800	0	250	0.0	0.0		07/19/88
416		040:49:01.500	073:46:55.000	0	250	0.0	0.0		07/19/88
504		040:50:13.499	073:46:45.499	0	250	0.0	0.0		07/19/88
100	F	040:47:47.951	073:46:45.763	30	139	0.0	0.0		07/20/88
200	V	040:51:03.685	073:46:09.152	0	139	0.0	0.0		07/20/88
201	V	040:49:27.587	073:46:29.260	0	139	0.0	0.0		07/20/88
202	V	040:48:43.548	073:45:42.207	0	139	0.0	0.0		07/20/88
203	V	040:48:31.456	073:47:57.038	0	139	0.0	0.0		07/20/88
204	V	040:48:16.540	073:47:26.505	0	139	0.0	0.0		07/20/88
101	F	040:48:48.658	073:45:55.272	3	139	0.0	0.0		07/21/88
102	F	040:50:04.549	073:45:24.636	1	139	0.0	0.0		07/21/88
103	F	040:50:41.655	073:46:00.214	6	139	0.0	0.0		07/20/88
205	V	040:50:41.669	073:46:00.159	0	139	0.0	0.0		07/21/88
001	P	040:49:01.608	073:46:54.491	0	243	0.0	0.0		09/21/88
002	P	040:49:25.390	073:47:08.365	0	243	0.0	0.0		08/16/88
003	P	040:50:16.969	073:45:47.437	0	243	0.0	0.0		09/21/88
004	P	040:50:16.138	073:45:47.914	0	243	0.0	0.0		08/17/88
005	P	040:50:13.796	073:46:43.997	0	243	0.0	0.0		08/17/88
006	M	040:49:47.999	073:46:59.999	0	243	0.0	0.0		08/21/88
007	M	040:48:48.000	073:46:60.000	0	243	0.0	0.0		08/21/88
008	M	040:50:36.000	073:45:54.000	0	243	0.0	0.0		08/21/88
0[illegible]	P	040:55:53.418	073:36:13.840	0	243	0.0	0.0		08/31/88
01[illegible]	P	040:55:57.084	073:36:57.801	0	243	0.0	0.0		09/08/88
011	P	040:57:23.282	073:37:28.809	0	243	0.0	0.0		09/11/88
012	M	040:59:18.000	073:28:42.000	0	243	0.0	0.0		11/01/88
013	M	040:59:18.000	073:30:12.000	0	243	0.0	0.0		11/01/88
014	C	040:50:15.376	073:46:42.011	0	243	0.0	0.0		07/29/88
015	C	040:50:14.149	073:46:43.943	0	243	0.0	0.0		07/29/88
016	C	040:50:17.393	073:45:47.348	0	243	0.0	0.0		08/03/88
017	C	040:50:16.583	073:45:47.133	0	243	0.0	0.0		08/03/88
01[illegible]	C	040:50:17.799	073:45:46.815	0	243	0.0	0.0		08/03/88
0	C	040:50:17.108	073:45:47.172	0	243	0.0	0.0		08/03/88
0	P	040:58:34.169	073:34:21.724	0	243	0.0	0.0		10/11/88
02[illegible]	P	040:58:21.477	073:33:53.397	0	243	0.0	0.0		10/12/88
022	P	040:59:13.747	073:32:31.610	0	243	0.0	0.0		10/12/88
023	P	040:59:10.067	073:32:15.899	0	243	0.0	0.0		10/13/88
024	P	040:58:38.315	073:32:22.745	0	243	0.0	0.0		10/13/88
025	P	040:59:12.469	073:32:16.010	0	243	0.0	0.0		10/13/88
026	P	040:54:58.930	073:32:42.345	0	243	0.0	0.0		10/25/88
736		040:54:38.000	073:38:04.000	0	250	0.0	0.0		08/07/88
737		040:55:25.800	073:37:44.900	0	250	0.0	0.0		08/07/88
739		040:55:39.700	073:38:01.500	0	250	0.0	0.0		08/07/88
740		040:55:47.980	073:35:29.060	0	250	0.0	0.0		08/07/88
7[illegible]		040:55:52.500	073:36:13.900	0	250	0.0	0.0		08/07/88
74[illegible]		040:56:21.000	073:34:54.000	0	250	0.0	0.0		08/07/88
745		040:57:22.500	073:37:29.300	0	250	0.0	0.0		08/07/88
407		040:56:00.500	073:34:21.200	0	250	0.0	0.0		08/07/88
490		040:56:12.000	073:37:06.000	0	250	0.0	0.0		08/07/88
491		040:56:22.000	073:36:18.900	0	250	0.0	0.0		08/07/88
107	F	040:55:05.071	073:43:52.470	2	139	0.0	0.0		08/10/88
110	F	040:54:09.443	073:37:59.009	2	139	0.0	0.0		08/10/88
113	V	040:58:57.043	073:37:24.955	20	139	0.0	0.0		08/10/88
116	F	040:56:24.121	073:41:50.859	20	139	0.0	0.0		08/10/88
117	F	040:58:57.549	073:37:22.023	10	139	0.0	0.0		08/10/88
118	F	040:54:31.265	073:35:14.215	5	139	0.0	0.0		08/10/88
209	V	040:57:05.376	073:43:44.456	0	139	0.0	0.0		08/10/88
210	V	040:59:23.329	073:40:01.855	0	139	0.0	0.0		08/10/88
211	V	040:59:30.632	073:39:35.224	0	139	0.0	0.0		08/10/88
212	V	040:59:18.059	073:38:05.244	0	139	0.0	0.0		08/10/88
213	V	040:54:22.762	073:34:00.340	0	139	0.0	0.0		08/10/88
214	V	040:58:03.435	073:40:21.978	0	139	0.0	0.0		09/10/88
119	F	040:56:41.568	073:29:14.429	0	139	0.0	0.0	2	09/28/88
120	F	041:00:49.147	073:32:33.277	27	139	0.0	0.0	8	09/10/88
215	V	040:57:14.345	073:23:43.781	0	139	0.0	0.0		09/10/88

2.	V	041:02:29.936	073:26:37.872	0	139	0.0	0.0		09/10/88
428		041:02:24.300	073:28:01.299	0	250	0.0	0.0		09/10/88
429		041:01:56.000	073:28:08.000	0	250	0.0	0.0		09/10/88
422		041:01:11.000	073:28:58.000	0	250	0.0	0.0		09/10/88
423		041:00:36.000	073:28:54.000	0	250	0.0	0.0		09/10/88
454		041:00:31.000	073:26:59.000	0	250	0.0	0.0		09/10/88
803		041:01:31.560	073:26:44.730	0	250	0.0	0.0		09/10/88
804		041:01:46.190	073:27:14.180	0	250	0.0	0.0		09/10/88
802		041:00:49.970	073:25:19.850	0	250	0.0	0.0		09/10/88
805		041:01:47.000	073:24:37.000	0	250	0.0	0.0		09/10/88
411		040:58:33.000	073:38:07.000	0	250	0.0	0.0		09/12/88
414		040:59:23.300	073:34:47.000	0	250	0.0	0.0		09/12/88
412		040:59:13.500	073:32:32.500	0	250	0.0	0.0		09/12/88
413		040:59:16.000	073:32:34.000	0	250	0.0	0.0		09/12/88
452		040:58:38.000	073:34:03.000	0	250	0.0	0.0		09/12/88
749		040:58:18.000	073:33:55.000	0	250	0.0	0.0		09/12/88
801		040:59:50.000	073:30:51.000	0	250	0.0	0.0		09/12/88
424		040:59:29.000	073:31:03.000	0	250	0.0	0.0		09/12/88
453		040:59:18.000	073:31:57.000	0	250	0.0	0.0		09/12/88
816		040:59:13.800	073:32:14.700	0	250	0.0	0.0		09/12/88
814		040:58:39.130	073:32:24.160	0	250	0.0	0.0		09/12/88
21	V	041:02:07.135	073:37:23.192	0	250	0.0	0.0		09/26/88
2.	V	041:02:59.087	073:31:28.485	0	250	0.0	0.0		09/26/88
405		040:54:58.200	073:32:44.200	0	250	0.0	0.0		10/03/88
716		040:55:51.000	073:31:31.000	0	250	0.0	0.0		10/03/88
121	F	041:02:53.824	073:27:27.369	0	250	0.0	0.0	5	10/06/88
122	F	040:57:13.070	073:23:50.097	0	250	0.0	0.0	1	10/18/88
219	V	041:02:55.683	073:25:09.061	0	250	0.0	0.0		10/18/88
220	V	040:55:54.803	073:27:57.846	0	250	0.0	0.0		10/18/88
221	V	040:55:46.631	073:25:49.286	0	250	0.0	0.0		10/18/88
222	V	040:54:38.613	073:25:52.591	0	250	0.0	0.0		10/18/88
2	V	040:53:57.054	073:23:51.724	0	250	0.0	0.0		10/18/88
2	V	040:53:28.227	073:24:38.641	0	250	0.0	0.0		10/18/88
6		040:57:14.800	073:26:05.000	0	250	0.0	0.0		10/18/88
809		040:56:59.500	073:24:48.000	0	250	0.0	0.0		10/18/88
810		040:56:57.400	073:24:56.700	0	250	0.0	0.0		10/18/88
811		040:57:04.800	073:26:58.000	0	250	0.0	0.0		10/18/88
812		040:56:52.900	073:27:57.600	0	250	0.0	0.0		10/18/88
813		040:56:51.900	073:28:01.100	0	250	0.0	0.0		10/18/88
815		040:56:50.570	073:24:33.770	0	250	0.0	0.0		10/18/88
027	P	040:55:58.093	073:31:23.409	0	243	0.0	0.0		10/25/88
028	P	040:59:50.590	073:30:52.055	0	243	0.0	0.0		10/25/88
029	P	040:59:13.286	073:32:13.232	0	243	0.0	0.0		10/25/88
03	P	040:56:03.089	073:31:32.127	0	243	0.0	0.0		10/25/88
0	P	040:55:50.491	073:31:33.676	0	243	0.0	0.0		10/25/88
032	P	040:55:55.627	073:31:29.630	0	243	0.0	0.0		10/25/88
033	P	040:55:55.351	073:31:23.962	0	243	0.0	0.0		10/25/88
034	P	040:55:48.492	073:31:24.640	0	243	0.0	0.0		10/25/88
123	F	040:58:37.199	073:07:06.814	30	243	0.0	0.0	7	10/27/88
124	F	041:08:13.536	073:13:02.055	7	243	0.0	0.0	6	10/27/88
125	F	041:05:01.401	073:21:19.649	5	243	0.0	0.0	3	10/28/88
225		041:07:01.512	073:13:19.526	0	243	0.0	0.0		10/27/88
226		041:04:38.394	073:22:11.289	0	243	0.0	0.0		10/27/88
779		041:05:00.000	073:16:17.000	0	250	0.0	0.0		10/27/88
780		041:05:04.100	073:16:08.100	0	250	0.0	0.0		10/27/88
881	F	041:07:54.000	073:12:19.000	0	250	0.0	0.0		10/27/88
882	F	041:03:35.000	073:06:26.000	0	250	0.0	0.0		10/27/88
917		041:04:43.000	073:16:13.000	0	250	0.0	0.0		10/27/88
999	L	041:03:28.800	073:10:07.800	0	250	0.0	0.0		10/27/88
998	L	041:03:25.800	073:08:35.400	0	250	0.0	0.0		10/27/88
997	L	041:02:00.600	073:07:27.600	0	250	0.0	0.0		10/27/88
996	L	041:03:27.600	073:10:06.600	0	250	0.0	0.0		10/27/88
227	V	041:08:00.195	073:17:15.359	0	250	0.0	0.0		10/28/88
228	V	041:07:10.364	073:22:02.055	0	250	0.0	0.0		10/28/88
22	V	041:09:33.147	073:09:50.371	0	250	0.0	0.0		10/28/88

SIDE SCAN SHEET ABSTRACT

NOAA SHIP HECK PROJECT NUMBER: OPR-B660-RU/HE-88 AWOIS NO. 6490 SHEET NO. HE-10-2-88

DOY	TARGET NO.	REF. LINE	FIX NO.	TIME	COORDINATES E: / N:	HGT	SURND DEPTH	REFERENCE CONTACT NO.	RECON IMAGE POS. NO.	STATUS:
DOY 224	1	4600	751+4	173527	E: 102013.2 N: 19135.3	0	55'		2001 – 2002	I
DOY 224	2	4440	765+3	182751	E: 102365.1 N: 18770.3	13	59'		2001 – 2003 2319 – 2320	I
DOY 225	3	3800	812+2	123238	E: 102720.4 N: 19558.3	2.5'	51.5'		1996 – 1997 2316 – 2317 2413 – 2414	I, small boat
DOY 225	4	3640	838+5	140456	E: 102022.8 N: 21630.3	3'	62'	SEE TARGET 30	852+25 2417+1	D; Least Depth = 57.3; FIX 2573
DOY 225	5	3440	853+1	145205	E: 102140.7 N: 21032.4	1'	63'		2477+5	I,
DOY 225	6	3480	871+3	151748	E: 103129.6 N: 19281.5	1'	50'		2066 – 2067	I
DOY 225	7	3320	880+4	154107	E: 103714.8 N: 18785.4	4.6'	59'	SEE TARGET 28	2163 – 2164	I
DOY 225	8	3320	886+1	154840	E: 103371.1 N: 19314.9	–	49'	SEE TARGET 24		I
DOY 229	9	2860	1035 +5	145256	E: 103281.2 N: 20723.7	8.2'	58'	SEE TARGET 20		D; Least Depth = 53.1; FIX 2325
DOY 229	10	2640	1125 +5	172404	E: 104268.9 N: 20247.6	8.2'	55'	SEE TARGET 23		D; Least Depth = 40.3; FIX 2410
DOY 229	11	1720	1178	184312	E: 104450.4 N: 20578.2	5.4'	50'	SEE TARGET 26		D; Least Depth = 47.8; FIX 2400
DOY 229	12	1720	1185	185408	E: 103656.5 N: 21936.8	2.5'	57'		1709 – 1710	I

LEGEND: I = INSIGNIFICANT
D = DIVE
H = HYDRO RESOLVED
R = RECON IMAGERY REQUIRED

SIDE SCAN ET ABSTRACT

NOAA SHIP HECK PROJECT NUMBER: OPR-B660-RU/HE-88 AWOIS NO. _____ SHEET NO. _____

DOY	TARGET NO.	REF. LINE	FIX NO.	TIME	COORDINATES E: / N:	HGT	SURND DEPTH	REFERENCE CONTACT NO.	RECON IMAGE POS. NO.	STATUS:
DOY 230	13 ✓	1400	1226+1	145532	E: 103539.7 N: 22932.3			SEE TARGET 18	2481+3	D; Least Depth = 39.4'; FIX 2296 H; Least Depth = 39.4; FIX 2519+1
DOY 230	14 ✓	1240	1279 +1	190630	E: 105291.5 N: 20155.7			SEE TARGET 25		D; LD = 45.8'; FIX 2286
DOY 230	15 ✓	1960	1313 +1	200709	E: 103254.5 N: 22172.0			SEE TARGET 19		D; Least Depth = 50.2; FIX 2300
DOY 231	16	80	1472 +3	183757	E: 107182.3 N: 21018.4					D; Least Depth = 48.6'; FIX 2287
DOY 231	17	760	1363 +2	145132	E: 104260.7 N: 22878.2				2269+1 2291+3 2294+1	D; Least Depth = 50.3'; FIX 2409
DOY 235	18 ✓	2210	1604 +2	192102	E: 103535.7 N: 22934.8			SAME AS #13		H; (see #13)
DOY 236	19 ✓	1570	1665 +4	135601	E: 103260.5 N: 22157.2			SAME AS #15		D; (see #15)
DOY 236	20 ✓	450	1842 +3	183854	E: 103279.7 N: 20729.4			SAME AS # 9		D; (see #9)
DOY 237	21	160	1906 +3	134109	E: 104170.6 N: 20915.9				2278+4 2265	D; I; pile of rocks in current scour No least depth taken
DOY 237	22	160	1918	135721	E: 105692.7 N: 21872.7				2270 - 2272 1454	I
DOY 237	23 ✓	-480	2017 +5	163704	E: 104249.3 N: 20254.4			SAME AS #10		D; (see #10)
DOY 237	24 ✓	-800	2067 +3	175530	E: 103303.8 N: 19315.1			SAME AS #8		I; (see #8)

LEGEND: I=INSIGNIFICANT
D=DIVE
H=HYDRO RESOLVED
R=RECON IMAGERY REQUIRED

SIDE SCAN SHEET ABSTRACT

NOAA SHIP HECK PROJECT NUMBER: OPR-B660-RU/HE-88 AWOIS NO. _____ SHEET NO. _____

DOY	TARGET NO.	REF. LINE	FIX NO.	TIME	COORDINATES E: / N:	HGT	SURND DEPTH	REFERENCE CONTACT NO.	RECON IMAGE POS.NO.	STATUS:
DOY 237	25	-1120	2130 +4	193325	E: 105285.0 N: 20135.5			SAME AS #14		D; (see #14)
DOY 239	26	0	2281 +1	142638	E: — N: —			SAME AS #11		D; (see #11)
DOY 245	27	370	2307 +4	142107	E: 105364.9 N: 21903.5				2307+4 2301+4	D; Least Depth = 49.4'; FIX 2232
DOY 256	28	-1480	2466 +5	174252	E: 103709.8 N: 18781.4			SAME AS #7		I; (see #7)
DOY 256	29	-320	—	—	E: — N: —					
DOY 256	30	1240	2476 +2	192438	E: 102062.6 N: 21020.0			SAME AS #4		D; (see #4)
DOY					E: N:					
DOY					E: N:					
DOY					E: N:					
DOY					E: N:					
DOY					E: N:					
DOY					E: N:					

LEGEND: I=INSIGNIFICANT
D=DIVE
H=HYDRO RESOLVED
R=RECON IMAGERY REQUIRED

10/30/89

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-318SS

NUMBER OF CONTROL STATIONS	5
NUMBER OF POSITIONS	1673
NUMBER OF SOUNDINGS	3926

	TIME-HOURS	DATE COMPLETED
* PREPROCESSING EXAMINATION	36	01/20/89
VERIFICATION OF FIELD DATA	114	05/11/89
QUALITY CONTROL CHECKS	12	
EVALUATION AND ANALYSIS	123	10/27/89
FINAL INSPECTION	8	09/27/89
TOTAL TIME	257	

MARINE CENTER APPROVAL 10/31/89

*Preprocessing time is not considered as part of total survey time.

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMPOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: January 19, 1989

MARINE CENTER: Atlantic

OPR: B660

HYDROGRAPHIC SHEET: FE-318-SS (HE-10-2-88)

LOCALITY: Southern New England Coast, Connecticut and New York

TIME PERIOD: August 11 - September 20, 1988

TIDE STATION(S) USED: 846-7150 Bridgeport, CT

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 1.81 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 7.0 ft.

REMARKS: RECOMMENDED ZONING

1. Zone Direct

Chief Tidal Datum
Quality Assurance Section

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

GEOGRAPHIC NAMES

SURVEY NUMBER

FE-318SS

Name on Survey	A ON CHART NO. 12367	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
CONNECTICUT	X									1
GREAT CAPTAIN ISLAND	X									2
LONG ISLAND SOUND	X									3
MATINECOCK POINT	X									4
NEW YORK	X									5
										6
										7
										8
										9
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NOAA FORM 76-155 SUPERSEDES C&GS 197

OFFICE OF CHARTING AND GEODETIC SERVICES
ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT

SURVEY NO.: FE-318SS FIELD NO.: HE-10-2-88

Connecticut--New York, Long Island Sound, Between Matinecock Point and Great Captain Island

SURVEYED: 8 August 1988 through 20 September 1988

SCALE: 1:10,000 PROJECT NO.: OPR-B660-RU/HE-88

SOUNDINGS: RAYTHEON DSF-6000N Fathometer, EG&G Model 260 Side Scan Sonar, and Pneumatic Depth Gauge

CONTROL: MOTOROLA Falcon 484 Mini-Ranger (Range/Range)

Chief of Party.....C. B. Lawrence

Surveyed by.....G. H. Tuell
.....A. L. Beaver

Automated Plot by.....XYNETICS 1201 Plotter (AHS)

1. INTRODUCTION

a. This is a side scan sonar survey. A RAYTHEON DSF-6000N fathometer was operated concurrently with the side scan sonar; however, the soundings are of reconnaissance value only. No wire drag was accomplished during this survey. In cases where side scan sonar was used to determine the estimated depth of an item or object, the item is shown on a plot included in the report with the upper case 'A' in parenthesis. An appropriate note is shown on the plot. See also the memorandum titled: "Showing Estimated Side Scan Sonar Depths on Smooth Sheets", dated 23 February 1989.

b. Thirteen (13) 1:10,000 scale and one (1) 1:30,000 scale page size smooth sheets were generated during office processing, and are attached to this report. Sheets 3, 5, 6, 7, 10, 11, 12, and 13 of 14 show only the items found by the field unit. Sheet 1 of 14 shows the area covered by the field unit during the investigation of AWOIS Item #6490. Sheets 10 through 13 of 14 are items found during the investigation of AWOIS Item #6490.

In the case where the existence of an item was disproved by side scan sonar search, a track plot generated during office processing and the accompanying field swath plot(s) are inserted into the report.

c. No unusual problems were encountered during office processing.

d. Notes in the Descriptive Report were made in red during office processing.

2. CONTROL AND SHORELINE

a. Control is adequately discussed in section H. of the Descriptive Report.

b. There is no shoreline within the limits of this survey.

c. Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the survey datum and the North American Datum of 1927 (NAD27).

To place the 1:10,000 scale plots, sheets 2 through 14 on the NAD27 datum, move the projection lines 0.352 seconds (10.9 meters or 1.09 mm at the scale of the survey) north in latitude, and 1.548 seconds (36.2 meters or 3.62 mm at the scale of the survey) east in longitude.

To place the 1:30,000 scale plot, sheet 1, on the NAD27 datum, move the projection lines 0.352 seconds (10.9 meters or 0.363 mm at the scale of the survey) north in latitude, and 1.548 seconds (36.2 meters or 1.21 mm at the scale of the survey) east in longitude.

d. AWOIS item geographic positions listed in the Descriptive Report and the Evaluation Report are referenced to NAD27. Geographic positions of AWOIS items are converted to the present survey datum, NAD83, before inverse distance computations are made during office processing.

3. HYDROGRAPHY

The hydrography collected on this survey during side scan sonar operations is of reconnaissance value only and was not verified. This does not pertain to the depths shown on the smooth plots included in this report.

The development of the bottom configuration and determination of least depths of items found and shown on the smooth plots is considered adequate.

4. CONDITION OF SURVEY

The smooth sheets and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements

of the HYDROGRAPHIC MANUAL and the SIDE SCAN SONAR MANUAL.

The hydrographer should be commended for the clear and concise manner in which the horizontal control section of the Descriptive Report was written.

5. JUNCTIONS

There are no contemporary junctional surveys. There are no junctional requirements in the Project Instructions.

6. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic

H-1732 (1886) 1:20,000
H-1732a (1914) 1:20,000
H-5402a (1933) 1:10,000

The prior surveys listed above cover area of the entire present survey. Comparisons between present and prior hydrography were made only in the immediate area of the items investigated. In general the reconnaissance hydrography compared favorably with the prior survey soundings. In addition to the comparisons in section J. of the Descriptive report the following should be noted:

1) A charted 20-ft sounding in Latitude 40°58'39.5"N, Longitude 73°38'11.5"W that was outside of the search area for AWOIS Item #4411 was addressed by the hydrographer as being eight (8) feet shoaler than the hydrographic data obtained by the field unit. A comparison of the present survey reconnaissance depths and prior survey, H-5402a (1933), depths during office processing determined that the development run by the field unit did not provide any information in the immediate vicinity of the charted sounding. The prior survey depths and the present survey reconnaissance depths in the area are in good agreement.

2) A charted 60-ft sounding in Latitude 40°55'03"N, Longitude 73°37'27"W originates with prior survey H-1732a (1914). The sounding was identified by the hydrographer as being five (5) feet deeper than the present survey depths. The present survey reconnaissance depths do not surround the referenced charted sounding. It is not reasonable to make a definitive comparative statement about the charted sounding with respect to the present survey reconnaissance depths because there is insufficient data.

3) A charted 54-ft sounding in Latitude 40°55'11"N, Longitude 73°36'59"W originates with prior survey H-1732 (1886).

Present survey reconnaissance depths in the area range from 48 to 49 feet.

4) A charted 49-ft sounding in Latitude 40°55'18"N, Longitude 73°36'26"W originates with prior survey H-1732a (1914). Present survey reconnaissance depths in the area range from 45 to 46 feet.

5) A charted 63-ft sounding in Latitude 40°55'11"N, Longitude 73°37'30"W originates with an unknown source. Present survey reconnaissance depths in the area range from 53 to 54 feet.

The present survey reconnaissance depths are considered more accurate than the prior survey depths because of improved hydrographic survey equipment. A plot of the reconnaissance hydrography is included in the survey data package. The use of the reconnaissance hydrography to supplement the prior surveys is left to the discretion of the chart compiler.

b. Wire Drag

H-5078WD (1930) 1:20,000
H-5142WD (1931) 1:20,000

Prior wire drag surveys H-5078WD (1930) and H-5142WD (1931) cover the entire present survey area. AWOIS Items #1737, #1740, #1741, and #6491 originate with the prior wire drag survey H-5078WD (1930). AWOIS Items #1743, #4407, and #4411 originate with prior wire drag survey H-5142WD (1931). The following should be noted:

1) AWOIS Item #1737, a charted obstruction with a 40-ft wire drag clearance, in Latitude 40°55'25.80"N, Longitude 73°37'44.90"W originates with H-5078WD (1930). The field unit investigated this item using side scan sonar with negative results. In addition to the 200% side scan sonar coverage of the search area, the field unit split the side scan sonar lines with hydrographic reconnaissance lines in order to determine if there were any shoal features in the vicinity. No shoals were found. Present reconnaissance survey depths varied from 50 to 54 feet in the vicinity of the AWOIS item. It is recommended that the charted obstruction with a 40-ft wire drag clearance be removed from the chart. See also sheet 2 of 14.

2) AWOIS Item #1740 is two charted obstructions with 40-ft wire drag clearances in Latitude 40°55'48"N, Longitude 73°35'~~29.06"W~~ and Latitude 40°55'~~48.00~~ 36.00"N, Longitude 73°35'29.06"W. These obstructions and clearances originate with

GKM 5/16/90

prior survey H-5078WD (1930). The "claimed" 400% side scan sonar coverage was achieved by the field unit by completing 200% coverage with orthogonal lines, and then repeating the same lines once again. A thorough examination of the side scan sonargrams was made during office processing. Reconnaissance hydrography in the area shows depths of 45-46 feet. These reconnaissance depths are in agreement with the charted depths in the area. In this case, it is the opinion of the evaluator that the side scan sonar coverage ensonified the area sufficiently to support the field unit's recommendation of removal from the chart. See also sheet 4 of 14.

3) AWOIS Item #4407, a charted wreck with a 37-ft wire drag clearance, in Latitude 40°56'00.5"N, Longitude 73°34'21.2"W originates with H-5142WD (1931). After a thorough examination of the prior survey and the prior survey descriptive report, it was not clear whether or not the wreck was hung and what the depth of the drag was if the wreck was hung. The field unit investigated this item using side scan sonar with negative results. Present reconnaissance survey depths varied from 44 to 45 feet in the vicinity of the AWOIS item. It is recommended that the charted wreck with a 37-ft wire drag clearance be removed from the chart. See also sheet 8 of 14.

4) AWOIS Item #4411, a charted wreck with a 24-ft ~~wire drag clearance~~ sounding, in Latitude 40°58'33.0"N, Longitude 73°38'07.0"W, originates with H-5142WD (1931). After a thorough examination of the prior survey and the prior survey descriptive report, it was not clear whether or not the wreck was hung and what the depth of the drag was if the wreck was hung. The field unit investigated this item using side scan sonar with negative results. Side scan sonargrams did show three (3) significant contacts in the search area. A thorough examination of the sonargrams during office processing determined that these three (3) contacts are rocks. Positions were computed for the three (3) contacts using the side scan sonargrams and the available positional information. The contacts were plotted, and two (2) of the contacts are different aspects of the same rock. An estimated depth could only be determined for one of the rocks. A depth determination for the second rock was not practical because the full extent of the contact shadow was not seen on the sonargram. The rocks shown on the side scan sonargrams are located in Latitude 40°58'33.08"N, Longitude 73°38'02.56"W with an estimated depth of 28 feet and Latitude 40°58'36.67"N, Longitude 73°37'59.46"W. Present reconnaissance survey depths varied from 24 to 39 feet in the vicinity of the AWOIS item. It is recommended that the charted wreck with a 24-ft ~~wire drag clearance~~ soundings be removed from the chart. It is also recommended that the two rocks, one with an estimated depth of 28 feet from side scan sonar records and a

dangerous submerged rock, be charted as shown on the present survey. See also sheet 9 of 14.

5) AWOIS Item #6491 is a charted 43-ft depth in Latitude 40°56'22.0"N, Longitude 73°36'18.9"W. Item #6941 originates with prior survey H-5078WD (1930). The prior survey depth is shown with the note "actual sdg 48'" on the smooth sheet. The charted depth is from a wire drag clearance strip. The present side scan sonar survey investigation has a negative result. Present reconnaissance survey soundings in the vicinity of the AWOIS item range from 51-54 feet. These reconnaissance depths are in agreement with the charted depths in the area. It is recommended that the charted 43-ft depth be removed from the chart. See also sheet 14 of 14.

7. COMPARISON WITH CHART 12367 (17th Edition, Nov. 1/86)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and sources not readily ascertainable. The previously discussed prior surveys require no further consideration. Attention is directed to the following:

1) AWOIS Item #6490, a charted wreck, PA, in Latitude 40°56'12"N, Longitude 73°37'06"W originates with Local Notice to Mariners 5 of 1982 (LNM 5/82). During field operations seven (7) significant targets were located by the field unit. Detached positions were taken on six (6) of the seven (7) significant targets. The seventh target was a pile of rocks. The field unit dove on the rocks but did not obtain a detached position; however, a position was determined from the side scan sonar records and associated positional data. A position was computed by the field unit for the seventh target using the side scan sonargrams and positional data for the vessel track. The following tabulation provides the description, least depth (LD), position, distance and azimuth from AWOIS Item #6490 to each target, and surrounding reconnaissance depths (DEPTHS). The various items found by the field unit are listed closest to most distant from the listed position of AWOIS Item #6490.

DESCRIPTION	LD	POSITION	DIST(M)	AZ FROM 6490 TO TARGET	DEPTHS
ROCKS	*	40°56'18.02"N 73°37'01.71"W	211	028°23'11.8"	52-54
OBSTR	48	40°56'07.07"N 73°36'49.64"W	412	111°40'11.7"	51-52

WRECK	41	40°55'57.08"N 73°36'57.80"W	499	157°22'23.2"	50-52
WRECK	50	40°56'58.75"W 73°37'40.29"N	1650	330°55'18.0	57-58
WRECK	49	40°56'50.06"N 73°36'10.69"N	1747	047°46'18.8"	57-59
WRECK	56	40°56'21.38"N 73°38'31.68"W	2025	278°13'21.6"	58-59
WRECK	48	40°57'20.92"N 73°36'55.83"W	2139	006°22'59.2"	56-57

* A least depth (LD) was not obtained by the field unit for this item. A depth was determined for the rocks using the diver description of the contact which stated, "The rocks rise about two feet above the general trend of the bottom.", and the shoalest reconnaissance depth in the area of the rocks, 52 feet at MLLW. Subtracting the estimated distance the rocks protrude above the bottom from the reconnaissance depth produces a resultant estimated depth of 50 feet. See also sheet 1 of 14.

With consideration given to vessel traffic in the area the wreck with a least depth of 41 feet in Latitude 40°55'57.08"N, Longitude 73°36'57.80"W and the wreck with a least depth of 48 feet in Latitude 40°57'20.92"N, Longitude 73°36'55.83"W are considered hazards to surface navigation. It is the opinion of the hydrographer that the wreck that is listed last in this tabulation is AWOIS Item #6490. It is recommended that AWOIS Item #6490 be removed from the chart. It is recommended that the items described as "WRECK" on this tabulation be charted as wrecks with a known least depth (##Wk). The item described as "OBSTRUCTION" in the tabulation should be charted as an obstruction with a known least depth (## Obstn). The item described as "ROCKS" should not be charted.

2) A charted 49-ft sounding in Latitude 40°55'49"N, Longitude 73°38'03"W originates with an unknown source. Present survey reconnaissance depths in the area range from 53 to 54 feet.

3) A charted 43-ft sounding in Latitude 40°56'04"N, Longitude 73°36'45"W originates with an unknown source. Present survey reconnaissance depths in the area range from 50 to 51 feet.

4) A charted 52-ft sounding in Latitude 40°56'43"N,

Longitude 73°36'20"W originates with an unknown source. Present survey reconnaissance depths in the area range from 56 to 57 feet.

5) A charted 55-ft sounding in Latitude 40°56'52"N, Longitude 73°36'49"W originates with an unknown source. Present survey reconnaissance depths in the area range from 59 to 60 feet.

6) A charted 49-ft sounding in Latitude 40°57'00"N, Longitude 73°37'35"W originates with an unknown source. Present survey reconnaissance depths in the area range from 57 to 58 feet.

7) The hydrographer discusses a pipeline that crosses the area surveyed in section F2. of the Descriptive Report. A thorough examination of the sonargrams determined that there were two submarine pipelines or cables in the area surveyed. The most prominent cable traverses the approximate center of the area surveyed. A second submarine cable or pipeline was seen in the southern portion of the area surveyed. The second submarine pipeline enters the area surveyed on the south east corner and exits in the southern edge of the area surveyed. The approximate routes of each of these cables is shown on sheet 1 of 14.

The present survey is adequate to supplement the charted information in the common area.

b. Aids to Navigation

There are no fixed or floating aids to navigation within the limits of this survey.

8. COMPLIANCE WITH INSTRUCTIONS

This survey adequately complies with the Project Instructions except as noted in this report. This is a good side scan sonar survey for the AWOIS items resolved by this survey.

INSPECTION REPORT
FE-318SS

The data that make up this Side Scan Sonar survey have been inspected to gain insight into its overall completeness regarding survey coverage, presentation of survey results, and the verification or disproval of charted data. This survey, except as noted in the Evaluation Report, is considered complete and adequate to meet National Ocean Service standards. Processing is considered complete. The survey records comply with NOS requirements except as noted in the Evaluation Report.

Inspected:

R. D. Sanocki
Chief, Hydrographic Processing Unit
Atlantic Hydrographic Section

Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

Approved: 31 October 1989

Ray E. Moses, RADM, NOAA
Director, Atlantic Marine Center

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

JUN 1 1990

MEMORANDUM FOR: Commander Dean R. Seidel, NOAA
Chief, Hydrographic Surveys Branch

FROM: George K. Myers, Jr.
Chief, Standards Section

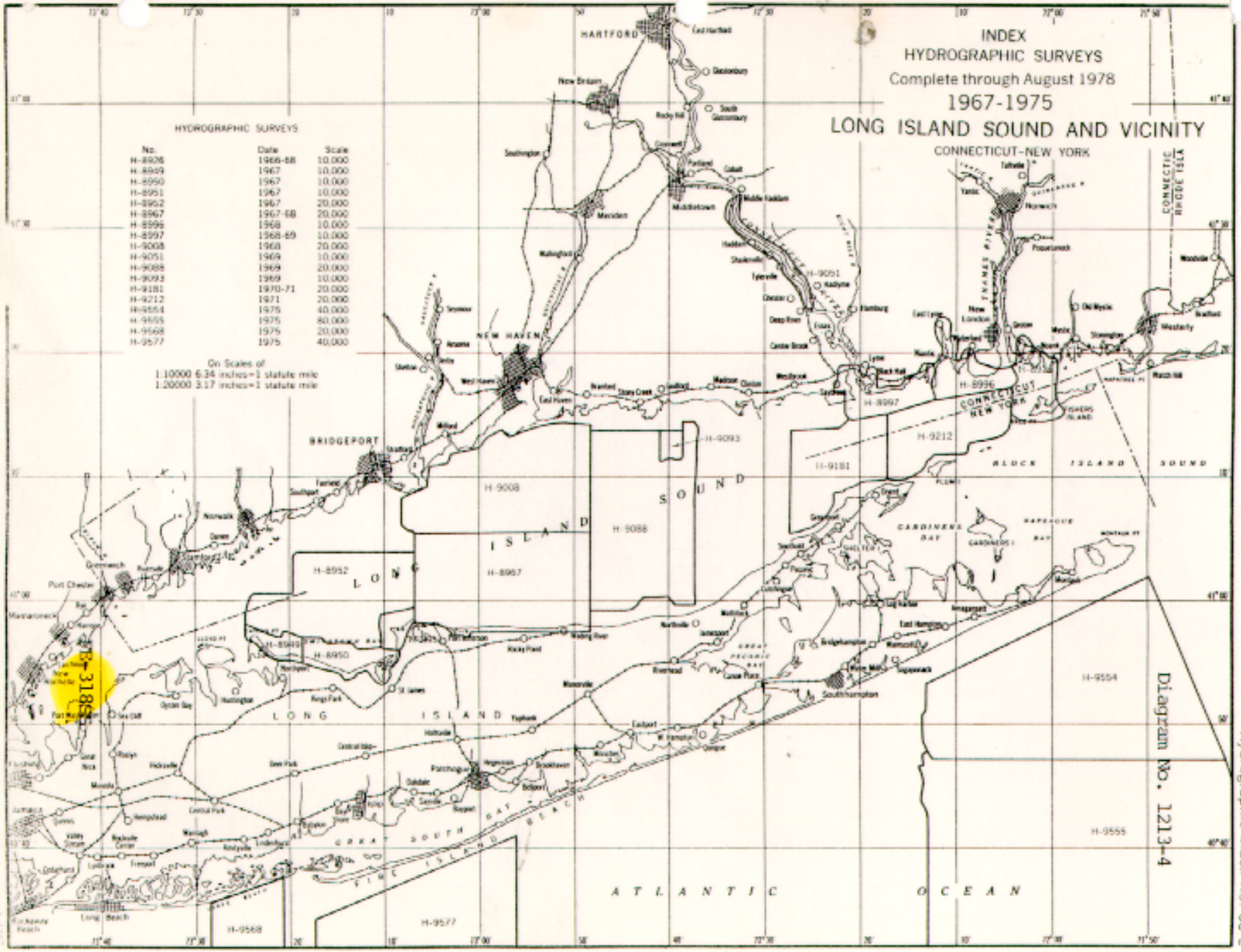
SUBJECT: Examination of Side Scan Sonar Survey FE-318 (1988), SS, Connecticut--New York, Long Island Sound, Between Matinecock Point and Great Captain Island

Chief of Party	C. B. Lawrence
Field Unit	NOAA Ship HECK
Processed by	Atlantic Marine Center
Examined by	G. K. Myers

An examination of side scan sonar survey FE-318 (1988) SS was accomplished to monitor the survey for adequacy with respect to data acquisition, conformance with applicable project instructions, search requirements, navigational hazards, smooth plotting, decisions made and actions taken by the evaluator, and the cartographic presentation of data.

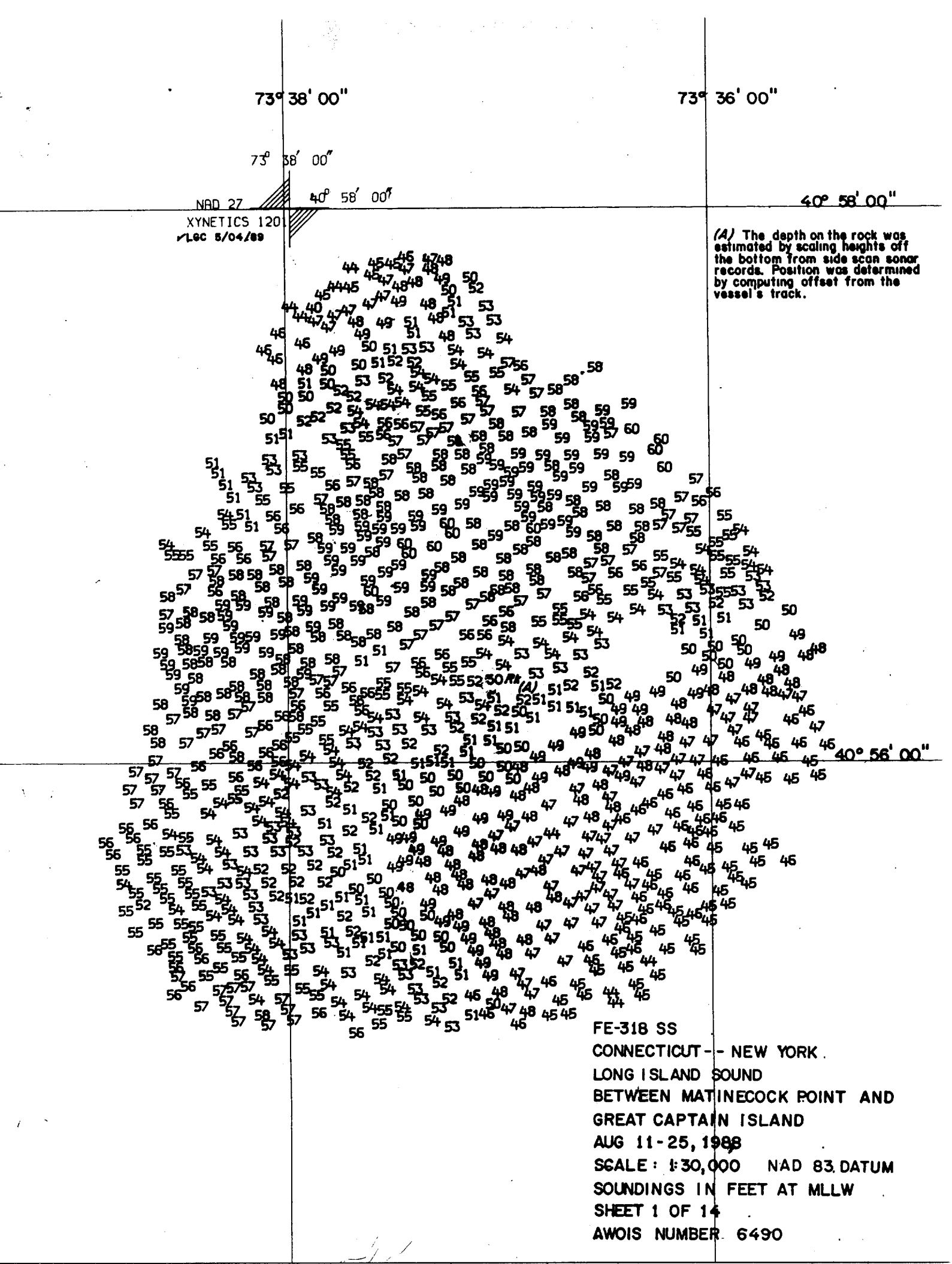
In general, the survey was found to conform to National Ocean Service standards and requirements except as stated in the Evaluation Report.

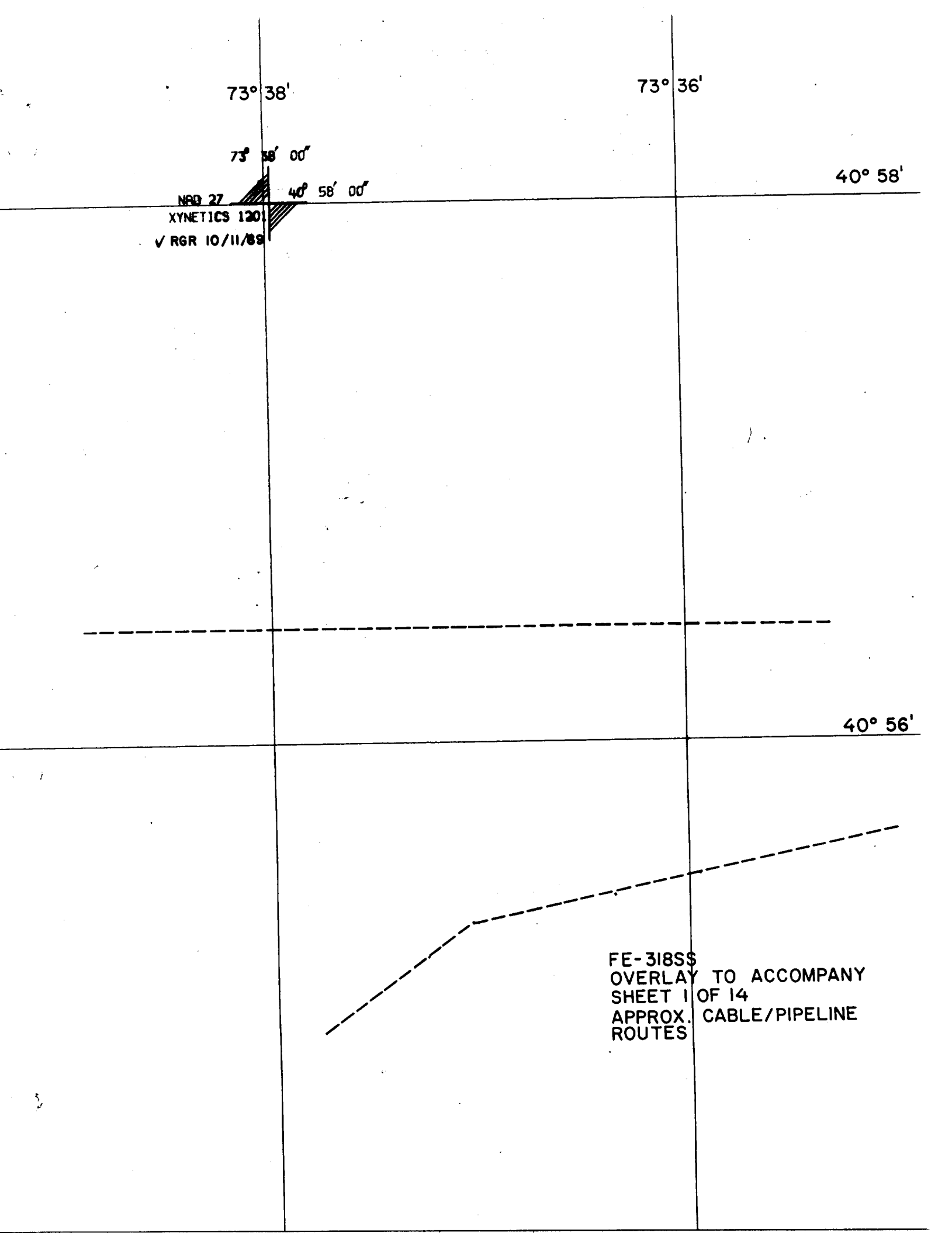
cc:
N/CG244 - Lawrence

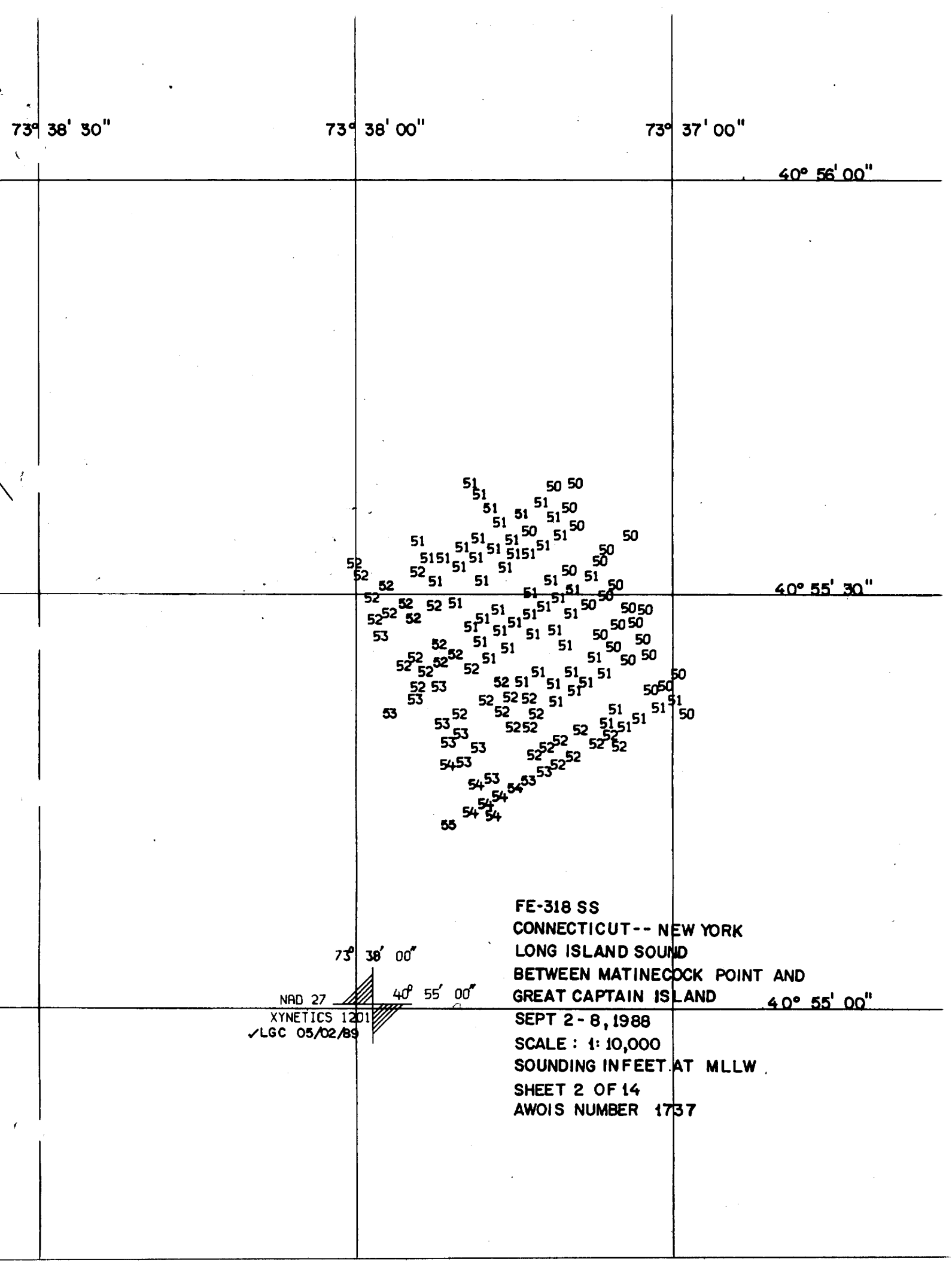


DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 63 L


73° 38' 00"
73° 36' 00"
73° 38' 00"
40° 58' 00"
NAD 27
XYNETICS 120
Loc 5/04/89
40° 58' 00"
(A) The depth on the rock was estimated by scaling heights off the bottom from side scan sonar records. Position was determined by computing offset from the vessel's track.
40° 56' 00"
FE-318 SS
CONNECTICUT -- NEW YORK.
LONG ISLAND SOUND
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND
AUG 11-25, 1988
SCALE: 1:30,000 NAD 83 DATUM
SOUNDINGS IN FEET AT MLLW
SHEET 1 OF 14
AWOIS NUMBER 6490

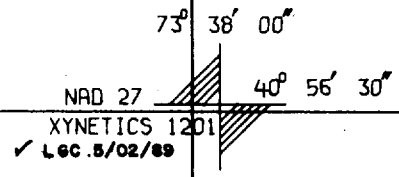

73° 38'
73° 36'
73° 38' 00"
40° 58'
40° 58' 00"
NAD 27
XYNETICS 1201
✓ RGR 10/11/88
40° 56'
FE-318SS
OVERLAY TO ACCOMPANY
SHEET 1 OF 14
APPROX. CABLE/PIPELINE
ROUTES


73° 38' 30"
73° 38' 00"
73° 37' 00"
40° 56' 00"
40° 55' 30"
40° 55' 00"
73° 38' 00"
40° 55' 00"
NAD 27
XYNETICS 1201
✓LGC 05/02/89
FE-318 SS
CONNECTICUT-- NEW YORK
LONG ISLAND SOUND
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND
SEPT 2 - 8, 1988
SCALE : 1: 10,000
SOUNDING IN FEET AT MLLW
SHEET 2 OF 14
AWOIS NUMBER 1737

73° 38' 00"

73° 37' 30"

73° 37' 00"



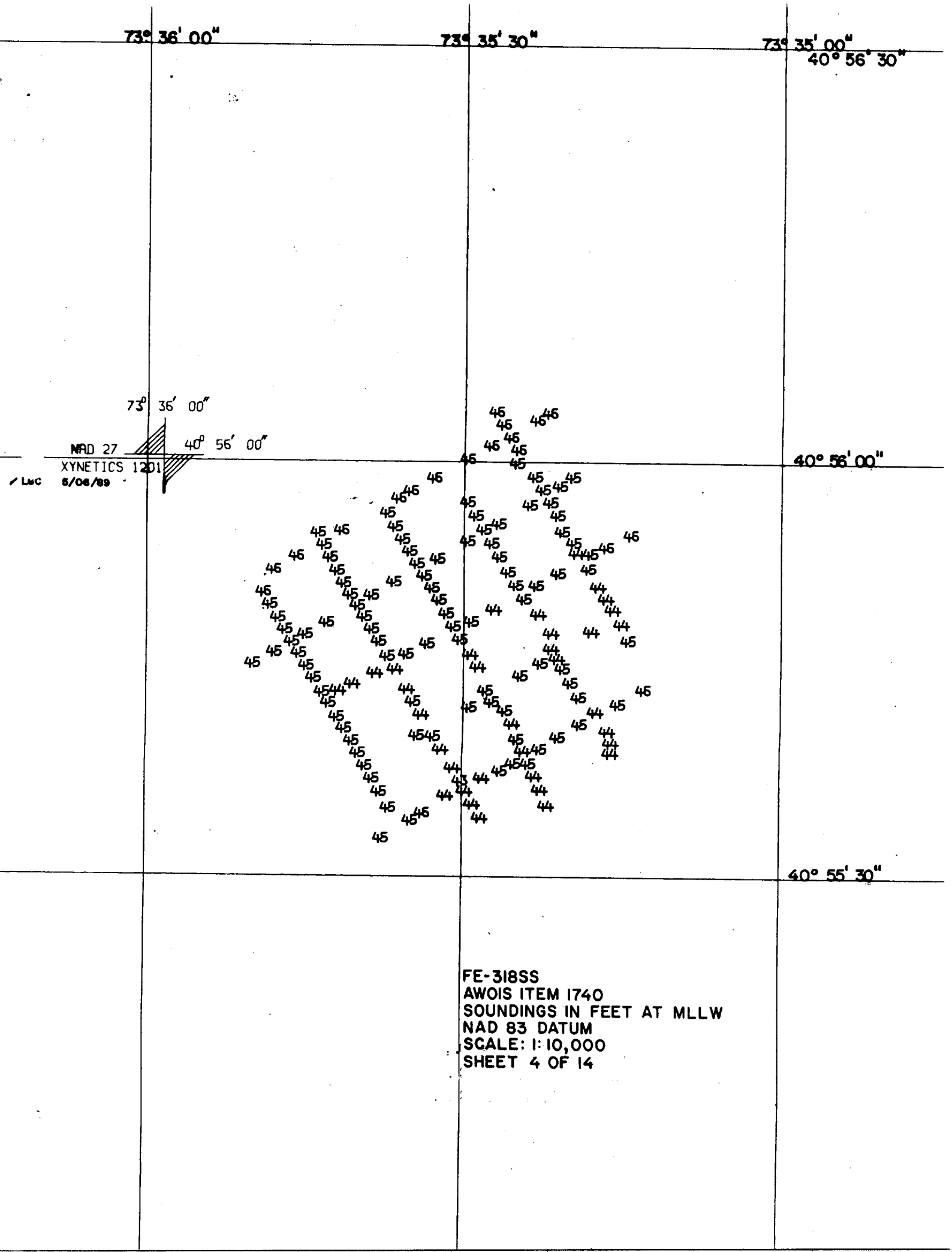
40° 56' 30"

52 Wk (wooden barge)

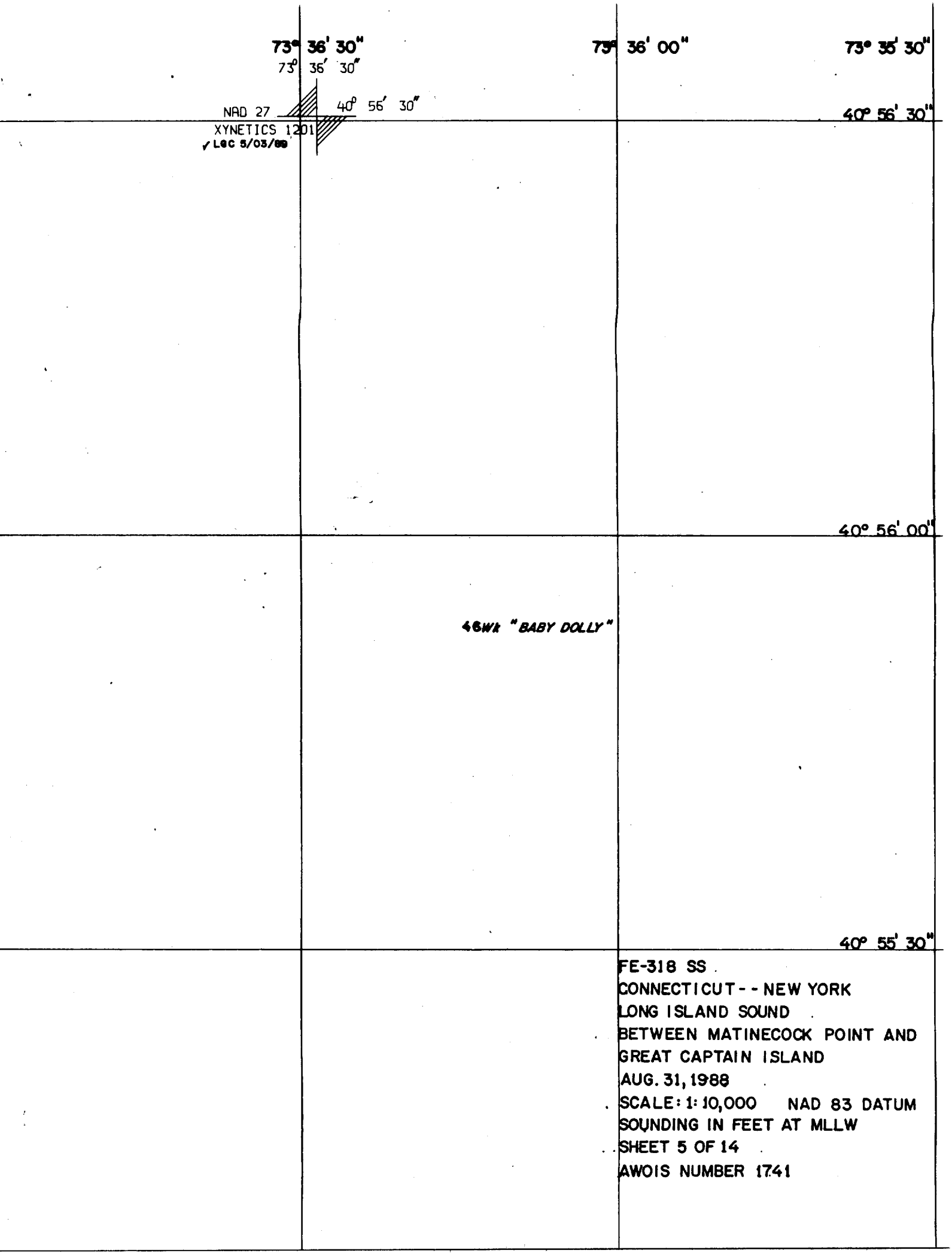
40° 56' 00"

FE-318 SS
CONNECTICUT -- NEW YORK
LONG ISLAND SOUND
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND
SEPT. 1, 1988
SCALE: 1:10,000
SOUNDING IN FEET AT MLLW
SHEET 3 OF 14
AWOIS NUMBER 1739
NAD 83 DATUM

40° 55' 30"



FE-318SS
AWOIS ITEM 1740
SOUNDINGS IN FEET AT MLLW
NAD 83 DATUM
SCALE: 1:10,000
SHEET 4 OF 14


73° 36' 30"
73° 36' 30"
73° 36' 00"
73° 35' 30"
NAD 27
40° 56' 30"
40° 56' 30"
XYNETICS 1201
✓ Lec 5/03/88
40° 56' 00"
46Wk "BABY DOLLY"
40° 55' 30"
FE-318 SS
CONNECTICUT - - NEW YORK
LONG ISLAND SOUND
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND
AUG. 31, 1988
SCALE: 1: 10,000 NAD 83 DATUM
SOUNDING IN FEET AT MLLW
SHEET 5 OF 14
AWOIS NUMBER 1741

73° 35' 30"

73° 35' 30".

NAD 27 40° 57' 00"

ETICS 1201

C 5/03/89

73° 35' 00"

73° 34' 30"

40° 57' 00"

40° 56' 30"

47 Wk (wooden)

40° 56' 00"

FE-318 SS
CONNECTICUT -- NEW YORK .
LONG ISLAND SOUND.
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND
AUG 31, 1989
SCALE: 1: 10,000 . NAD. 83 DATUM
SOUNDING IN FEET AT MLLW
SHEET 6 OF 14
AWOIS NUMBER 1743

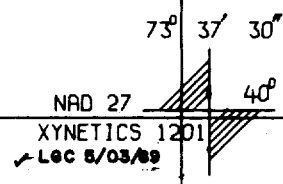
73° 38' 00"

73° 37' 30"

73° 37' 00"

40° 58' 00"

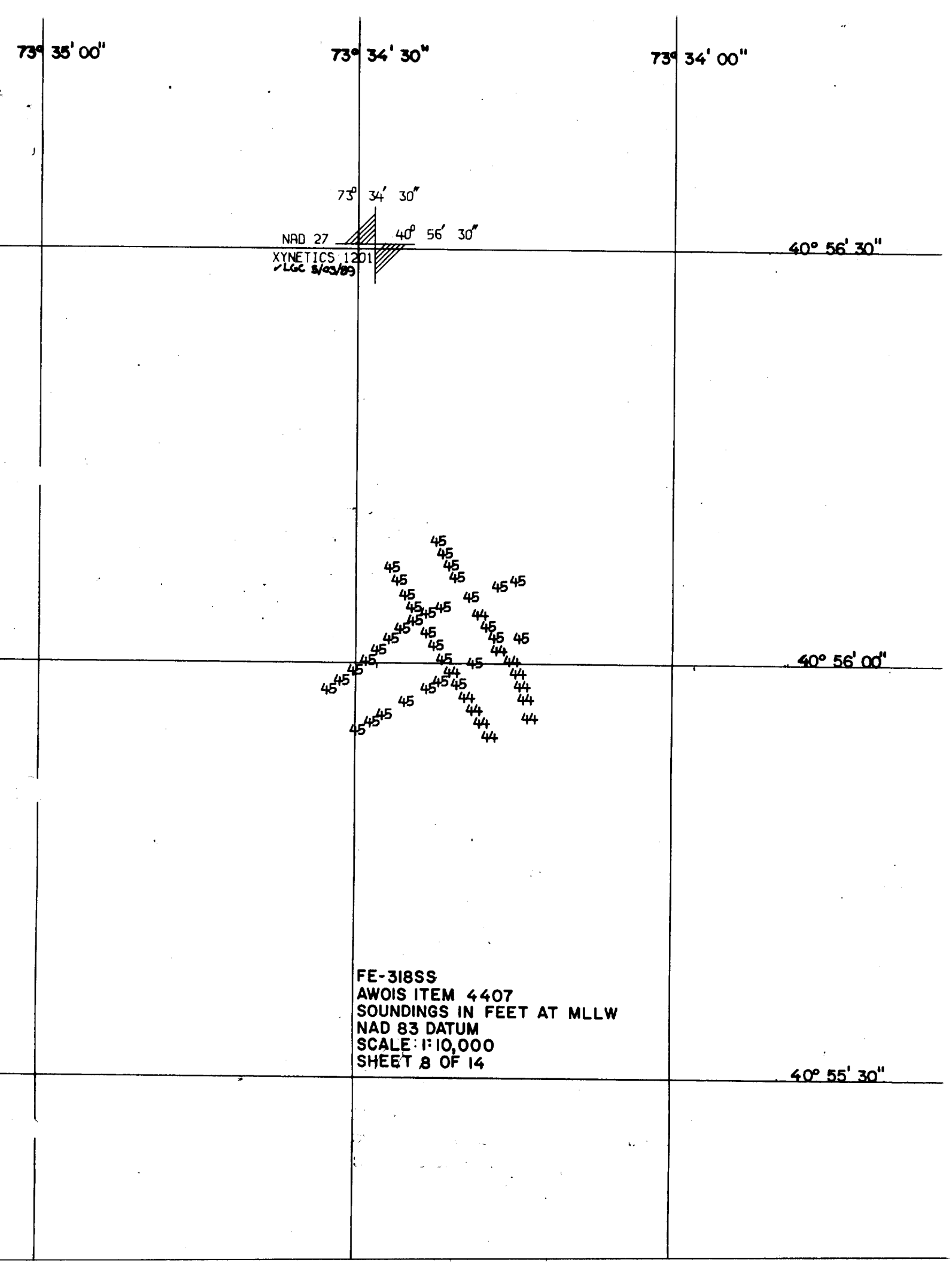
40° 57' 30"



39 Wk (Coastal Tanker)

40° 57' 00"

FE-318 SS
CONNECTICUT - - NEW YORK
LONG ISLAND SOUND.
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND
AUGUST 31, 1989
SCALE: 1:10,000 NAD 83 DATUM
SOUNDING IN FEET AT MLLW
SHEET 7 OF 14
AWOIS NUMBER 1745

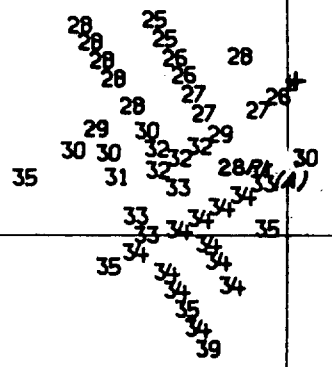

73° 35' 00"
73° 34' 30"
73° 34' 00"
40° 56' 30"
40° 56' 00"
40° 55' 30"
73° 34' 30"
40° 56' 30"
NAD 27
XYNETICS 1201
LGC 8/03/89
FE-318SS
AWOIS ITEM 4407
SOUNDINGS IN FEET AT MLLW
NAD 83 DATUM
SCALE: 1:10,000
SHEET 8 OF 14

73° 38' 30"

73° 38' 00"

73° 37' 30"

40° 59' 00"



40° 58' 30"

(A) The depth on this rock was estimated by scaling height off the bottom from side scan sonar records. Positions were determined by computing offsets from the vessel's track.

FE-318 SS.
CONNECTICUT -- NEW YORK
LONG ISLAND SOUND
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND
SEPT 13, 1988
SCALE: 1: 10,000
SOUNDINGS IN FEET AT MLLW
SHEET 9 OF 14
AWOIS NUMBER 4411

40° 58' 00"

73° 38' 30"

NAD 27

40° 58' 00"

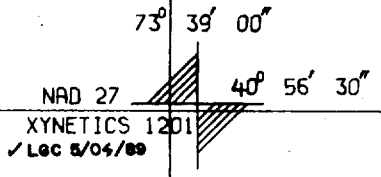
XYNETICS 1201
✓Loc 5/04/89

73° 39' 00"

73° 38' 30"

73° 38' 00"

40° 57' 00"



40° 56' 30"

56 W

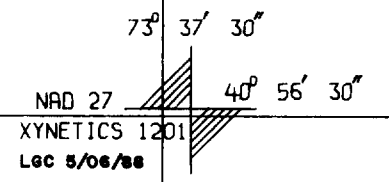
40° 56' 00"

FE-318 SS
CONNECTICUT -- NEW YORK
LONG ISLAND SOUND.
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND.
SEPT. 20, 1988
SCALE: 1:10,000 NAD 83 DATUM
SOUNDING IN FEET AT MLLW
SHEET 10 OF 14
AWOIS NUMBER 6490 (contact # 4)

73° 37' 30"

73° 37' 00"

73° 36' 30"



40° 56' 30"

48 Obstr (wreckage)

40° 56' 00"

41 Wk (steel)

FE-318 SS
CONNECTICUT-- NEW YORK
LONG ISLAND SOUND
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND
AUGUST 7, 1988
SCALE: 1:10,000 NAD 83 DATUM
SOUNDINGS IN FEET AT MLLW
SHEET 11 OF 14

40° 55' 30"

AWOIS NUMBER 6490 (contacts 10-23, 11-26)

73° 38' 00"

73° 37' 30"

73° 37' 00"

40° 58' 00"

40° 57' 30"

48 Wk

73° 37' 00"

NAD 27

40° 57' 00"

40°57' 00"

XYNETICS 1201

Loc 8/06/88

50 Wk (steel barge)

FE-318 SS

CONNECTICUT -- NEW YORK

LONG ISLAND SOUND

BETWEEN MATINECOCK POINT AND

GREAT CAPTAIN ISLAND

SEPT. 1-2, 1988

SCALE: 1:10,000 NAD 83 DATUM

SOUNDINGS IN FEET AT MLLW

SHEET 12 OF 14

AWOIS NUMBER 6490 (contacts 15-19, 17)

73° 36' 30"

73° 36' 00"

73° 35' 30"

73° 36' 00"

NAD 27

40° 57' 30"

XYNETICS 1201

✓ LOC 5/05/88

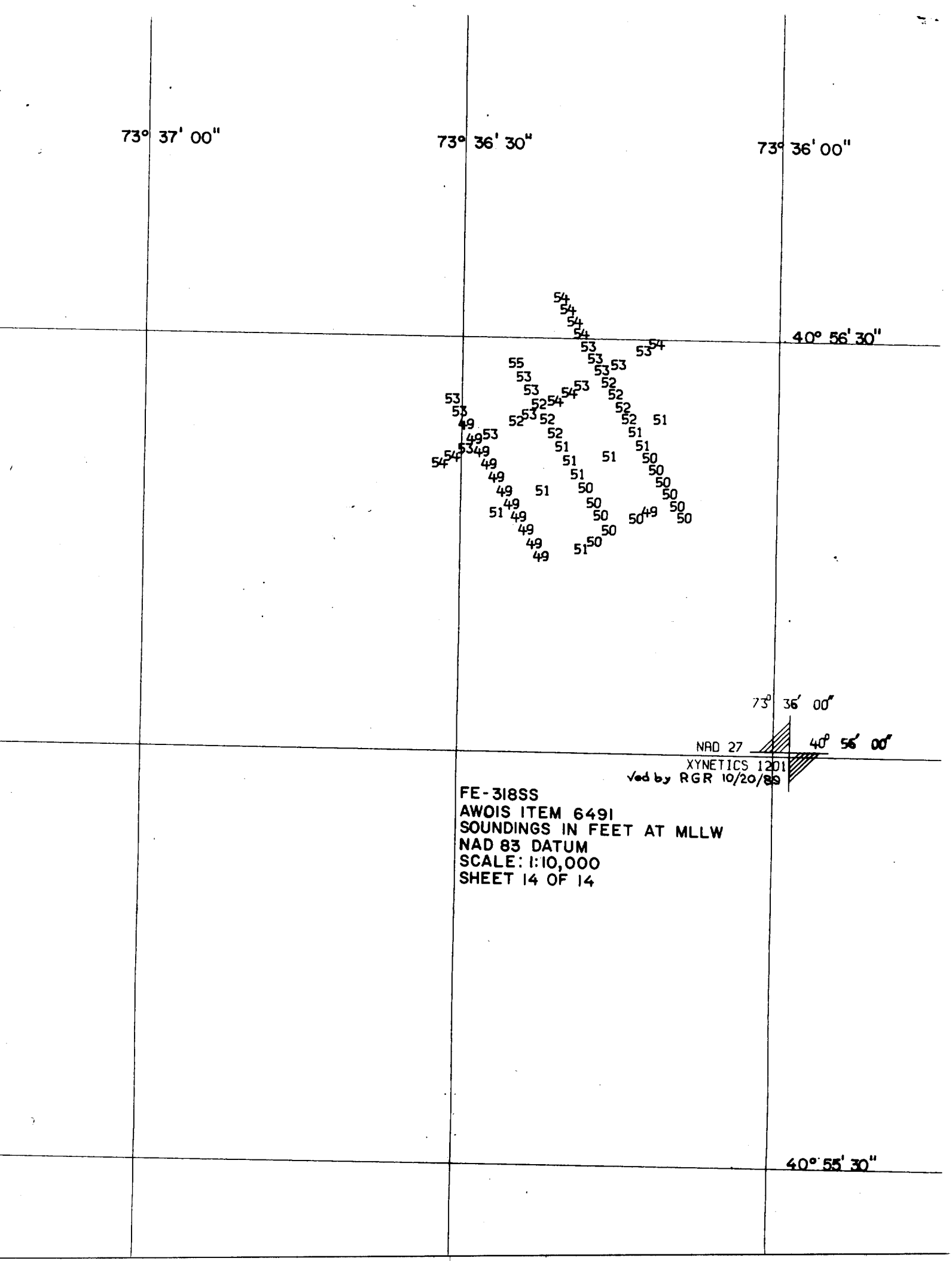
40° 57' 30"

40° 57' 00"

49 Wk (wooden barge)

40° 56' 30"

FE-318 SS
CONNECTICUT -- NEW YORK
LONG ISLAND SOUND
BETWEEN MATINECOCK POINT AND
GREAT CAPTAIN ISLAND
SEPT. 2, 1988
SCALE: 1: 10,000 NAD 83 DATUM
SOUNDING IN FEET AT MLLW
SHEET 13 OF 14
AWOIS NUMBER 6490 (contact 27)


73° 37' 00"
73° 36' 30"
73° 36' 00"
40° 56' 30"
40° 55' 30"
73° 36' 00"
NAD 27
40° 56' 00"
XYNETICS 1201
Ved by RGR 10/20/89
FE-318SS
AWOIS ITEM 6491
SOUNDINGS IN FEET AT MLLW
NAD 83 DATUM
SCALE: 1:10,000
SHEET 14 OF 14

N

73° 38' 30"

73° 38' 00"

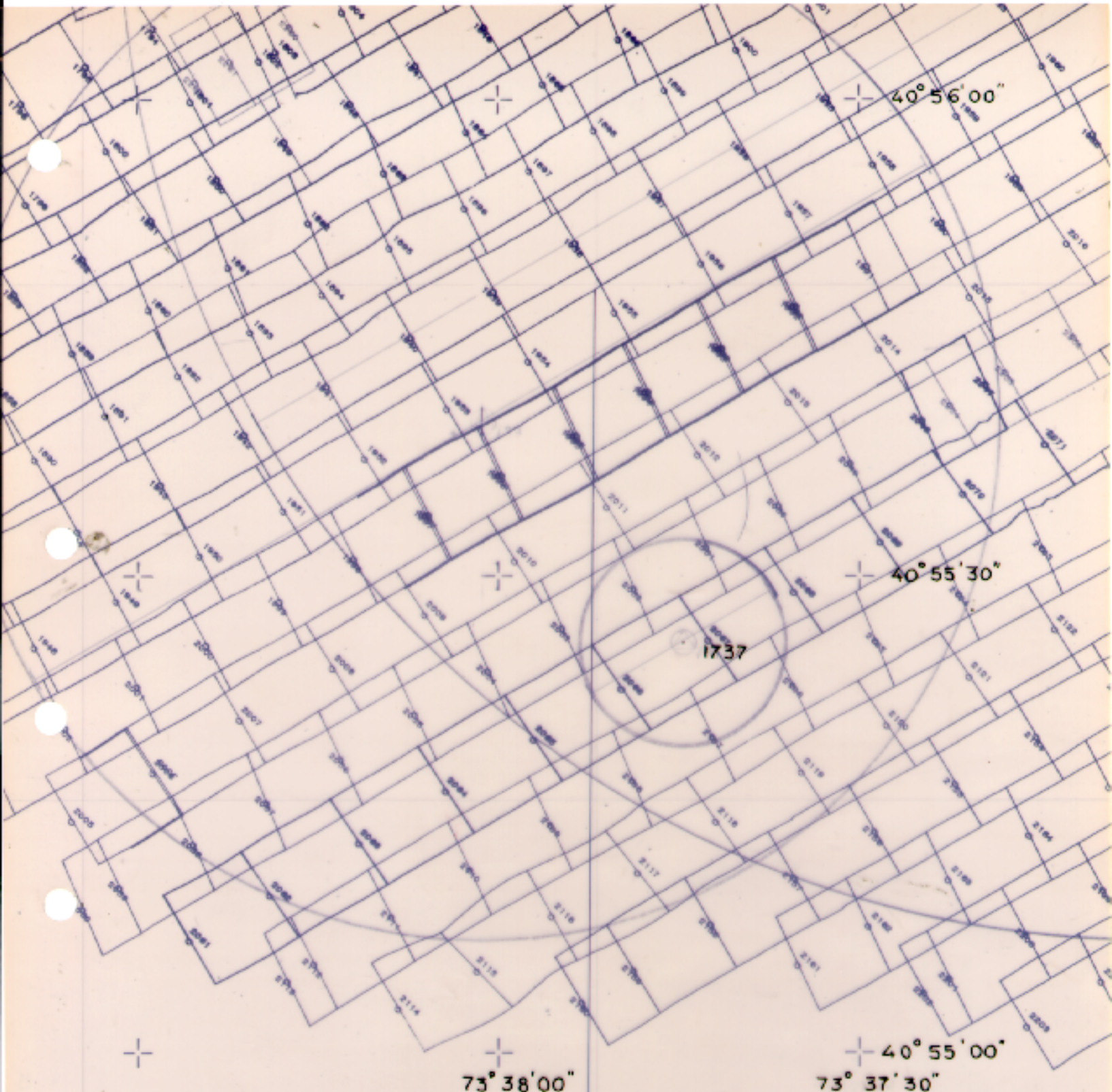
73° 37' 30"

40° 59' 00"

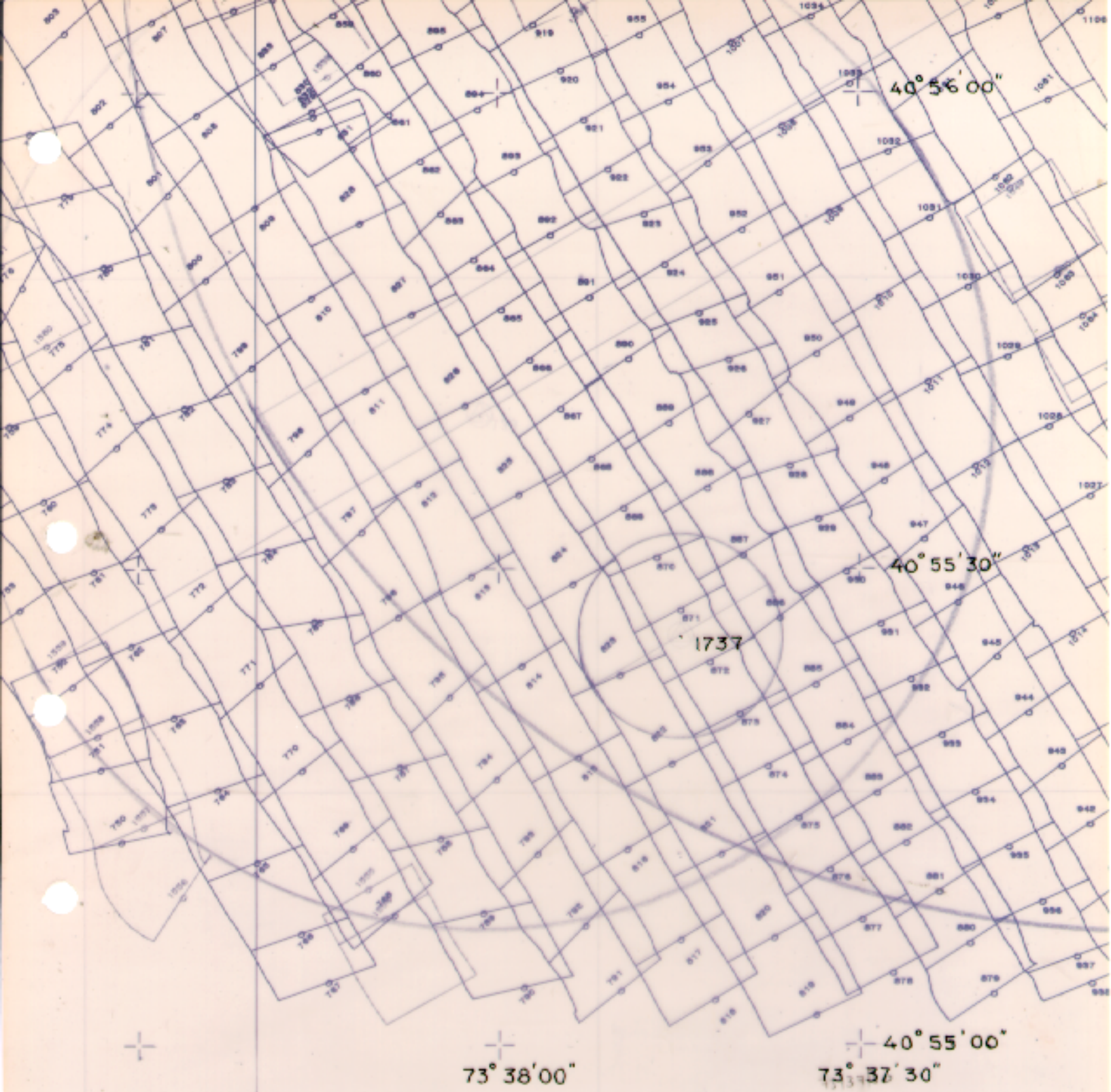
40° 58' 30"

40° 58' 00"

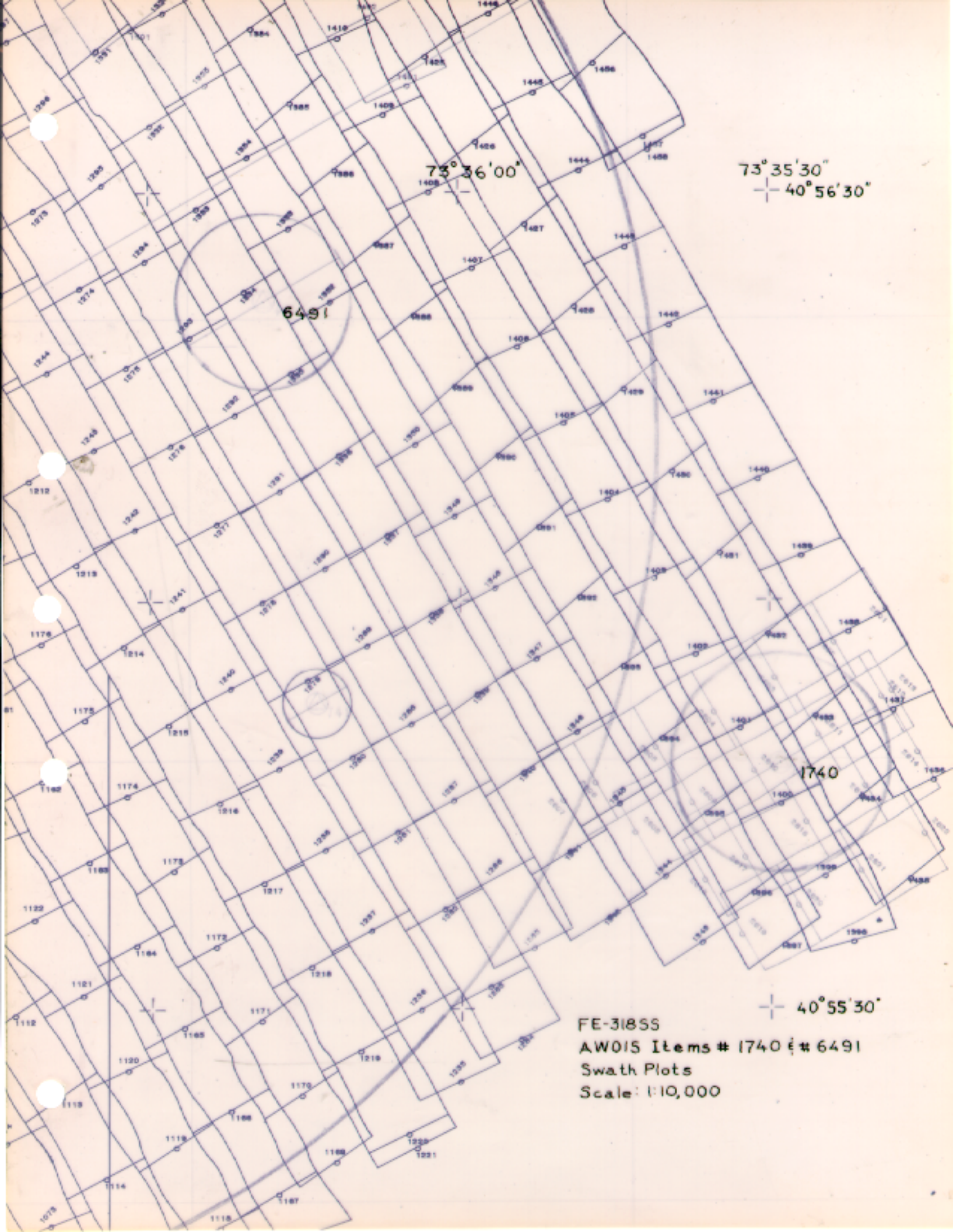
FE-318SS
AWOIS Item # 4411
Swath Plot
Scale: 1:10,000



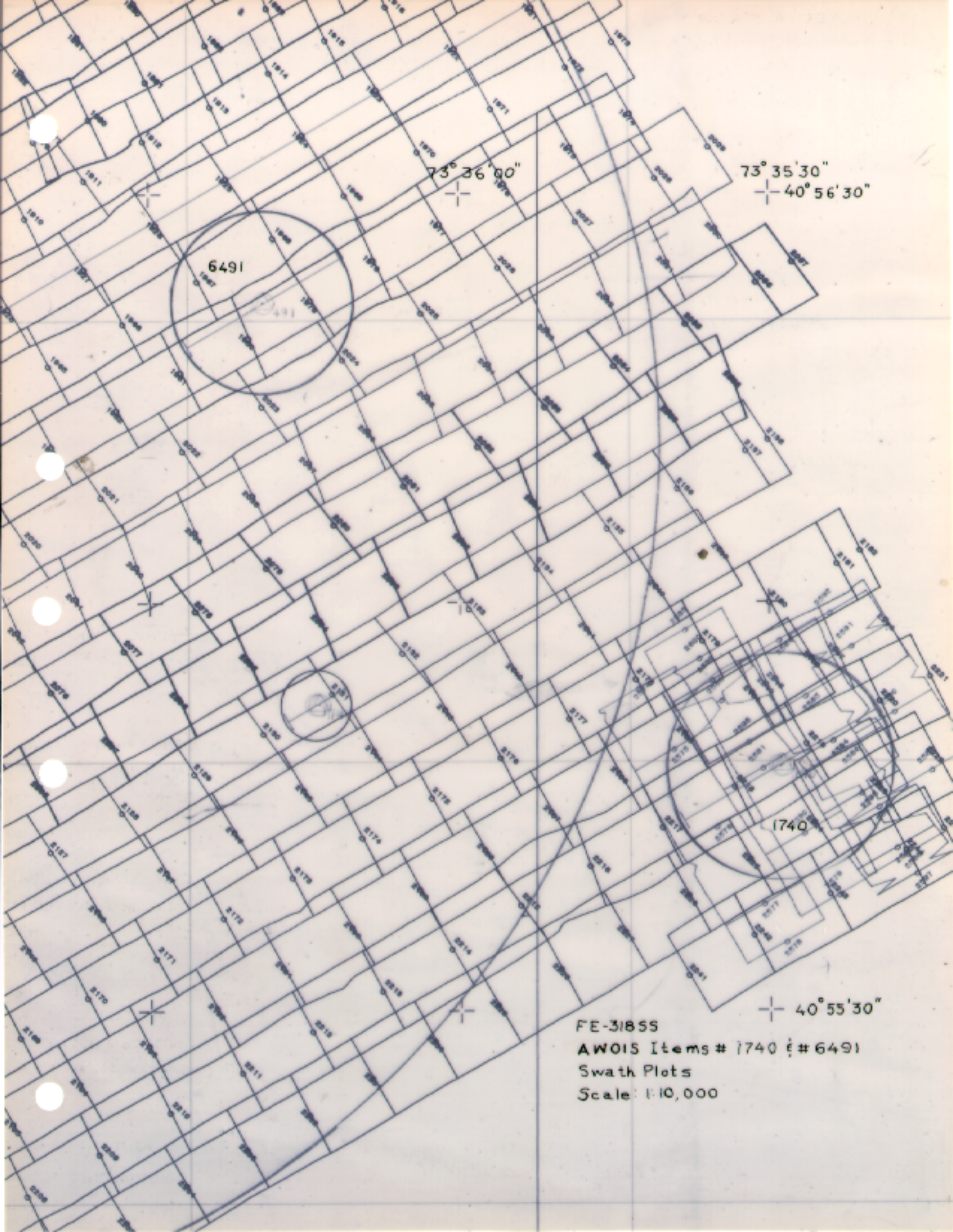
FE-318SS
AWOIS Item # 1737
Swath Plot
Scale: 1:10000



FE-3185S
AWOIS Item # 1737
Swath Plot
Scale: 1:10,000



FE-3185S
AW015 Items # 1740 & # 6491
Swath Plots
Scale: 1:10,000



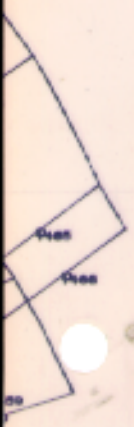
FE-31855
AW015 Items # 1740 & # 6491
Swath Plots
Scale: 1:10,000

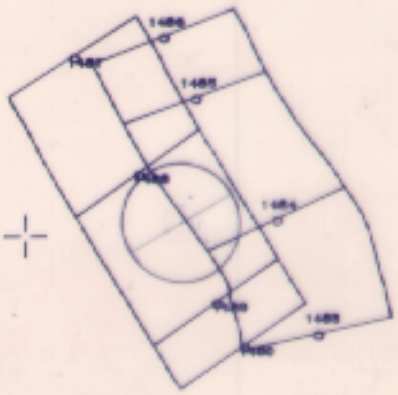
73° 34'30"

73° 34'00"

73° 33'30"

40° 56'30"





40° 56'00"

FE-318SS
AWOIS Item # 4407
Swath Plot
Scale: 1:10,000

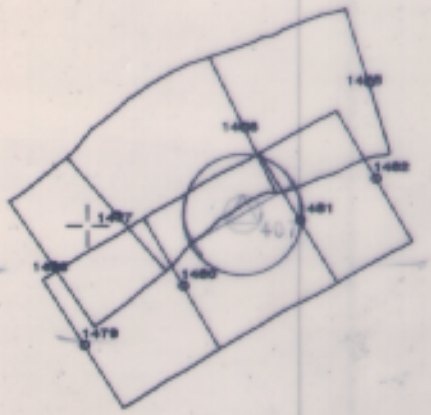
40° 55'30"

73° 34' 30"

73° 34' 00"

73° 33' 30"

40° 56' 30"



40° 56' 00"

FE-3185S
AW015 Item # 4407
Swath Plot
Scale: 1:10,000

40° 55' 30"

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

EXAMINED FOR NM
GDBU
7-16-90 HSC 12367 only
8-1-90

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-318SS

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
12363	2-28-91	John Pierce	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 51
12364	3-9-91	John Pierce	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 27
12367	4-23-91	R. A. Lillis	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 34
12365	6-9-92	John Bowker	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 34
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.